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ABSTRACT

Wide scale reform in Texas education financing was enacted in 1984 under the Equal Education Opportunity Act (Texas House Bill 72). This paper examines the reform through an analysis of the newly enacted weighted pupil Foundation School Program (FSP) during the 1985-86 school year. Two modes of inquiry were used: correlational analysis between variables considered to be relevant to the financing program, and an equity framework that employed various measures and techniques. Pearsons product moment correlations were derived for approximately 45 variables and grouped into major areas that included revenue and wealth, tax rates, teacher salaries, test scores, foundation program elements, and special program pupils. The measurement of equity required adjustment to that portion of the FSP that provides unequal expenditures for unequal needs such as the special program cost differentials of compensatory education, special education, vocational education, bilingual education, and gifted and talented education. The adjustment calculations are detailed and the measures utilized for the determination of equity presented. The analyses showed that a large portion of difference in total state and local revenue per pupil in Texas appears to be confined to approximately one-half of one percent of Texas students, or less. Appended are 44 footnotes, 17 tables and 4 figures that provide the numerical data, and an appendix that lists values for selected variables. (MLF)

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THE LAWMAKERS RESPOND: TEXAS EDUCATION FINANCE REFORM

(Part II)

Correlational and Equity Analyses of Current Law with Cross-Time Comparisons

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PREFACE

This paper represents the second in a two-part series on Texas education finance reform. Legislative changes in Texas finance enacted as part of the omnibus H.B. 72 during a special session in the summer of 1984 are of particular national interest due to the unique place Texas finance has occupied subsequent to the historic Rodriguez decision. This paper examines the results of the financing changes by correlational and equity analyses. The first paper in this series is descriptive and provides a review of statutory changes. It is entitled "The Lawmakers Respond: Texas Education Finance Reform, (Part I), Funding Formulas--Revisions and Reviews." It is available from ERIC Document Reproduction Services, Alexandria, VA: ED 264 651 (Phone 1-800-227-3742).

This paper is based on a longer work by the author entitled, Hard Times Hard Choices: A Policy Analysis of Alternatives to Current Law for a Reduction in Aids to Education (Austin, Texas: Texas Education Agency, 1986). The programming assistance of Nancy Stevens, Texas Education Agency is gratefully acknowledged. Thanks too, to Donna Packard for the manuscript preparation.

INTRODUCTION

In a special called session, the Sixty-eighth Texas Legislature enacted a comprehensive change in all aspects of elementary and secondary education under H.B. 72. While this initiative addressed the achievement of excellence in Texas public schools it also provided for increased equity in the provision of resources. To realize this latter goal of equity, the financing program--previously based on the personnel unit--was changed to a weighted pupil system and numerous other changes were enacted in the formula.[1] The impetus for this change were varied, but one main incentive to improve the equity of the financing system was derived from a decade-old dictum from the U.S. Supreme Court. In San Antonio vs. Rodriguez[2] the Supreme held the Texas system was "chaotic and unjust" but that solutions must come from the "[State] lawmakers and the democratic pressures that elect them." Thus, after ten years of incremental change in Texas education financing, the lawmakers enacted widescale reform in the summer of 1984 under H.B. 72--the Equal Educational Opportunity Act. This paper examines that response through an analysis of the newly enacted weighted pupil Foundation School Program during the 1985-86 school year.[3]

METHODOLOGY

The examination of the Foundation School Program for financing education in the State of Texas was operationalized through two modes of inquiry. The first utilized correlational analysis which was calculated between variables considered to be relevant to the financing program. The second utilized an equity framework which employed various

measures and techniques. Each is described below.

Correlational Analysis

Pearson product moment correlations were derived for approximately 45 variables and grouped into major ares. These included: revenue and wealth, tax rates, teacher salaries, test scores, foundation program elements, and special program pupils.

Data were for the 1985-86 academic year, with the exception of teacher salary data and TABS test scores--both of which were from 1984-85. The data were drawn from the Texas Education Agency files.

Equity Analysis

The measurement of the equitability of proposed changes in current law utilized established measures and techniques.[4] Because the measurement of equity includes horizontal measures, the determination of equal expenditures for equal needs, it was first necessary to adjust for the vertical dimensions of the Texas Foundation School Program (FSP)--that portion of the FSP which provides unequal expenditures for unequal needs. The vertical dimensions of the FSP include the special program cost differentials of compensatory education, special education, vocational education, bilingual education, and gifted and talented education. In addition, the sparsity and mall district adjustments, and the price differential index provide vertical adjustments to the State finance formula. In each case, these program elements address the additional costs necessary for provision of equivalent services across primary program beneficiaries, i.e., students, or districts. In the section which follows the adjustment calculations will be detailed and the

measures utilized for the determination of equity, presented.

Unit of Analysis--Adjusted Weighted Pupils

The pupil unit was utilized throughout the analysis. That is, in all cases analysis was made utilizing per pupil figures rather than aggregate district figures.[5]

Total full time equivalent[6] student units weighted in accordance with current law for special education and vocational education, were added to the district average daily attendance figure. Also added were weights for compensatory, bilingual, and gifted and talented education according to current law definitions. These provided a program-weighted pupil count per district. In addition to special student cost differentials, small district allotments were utilized to weight student counts as follows.[7] First, a dummy factor representing small district allotments per pupil was calculated per district.[8] This factor was divided by the per pupil basic allotment to determine the weight to be added to the average daily attendance figure. This weight represented the additional amount of revenue allotted per pupil due to diseconomies of scale associated with small district allotments, and was added to the program weighted pupil count per district for a total adjusted, weighted pupil count.[9]

The per pupil revenue figure was calculated by taking the aggregate district revenue figure, and dividing it by the total adjusted, weighted pupils in the district. This revenue figure was weighted again by total pupils in each district prior to calculation of Statewide statistics. The weighting of pupils for State figures allowed districts which have more pupils to be taken into account more heavily, e.g., Dallas, Houston, than when a single district revenue figure is utilized,

and provides a basis for the consideration of pupil equity concerns.

Funding Adjustments--The Price Differential Index and Sparsity Adjustments.

Prior to determining the funding per pupil in each district, revenue figures were corrected as follows.[10] First, transportation allotments to each district were subtracted from total revenue by district.[11] Second, revenue figures were deflated by the raw, e.g., unadjusted, price differential index per district.[12] Third, analyses were run both including and excluding sparse districts, i.e., those having fewer than 130 students and with particular grade level configurations, according to current law definitions.

These calculations[13] were made to correct for vertical adjustments to the Foundation School Program as noted above. As discussed, these vertical dimensions of the program provided additional funds for additional needs and were incongruent with the assumptions underlying horizontal equity measurement. Thus, adjustments made in the FSP for student differentials, diseconomies of scale, transportation costs and variations in the costs of education across the State due to uncontrollable factors, were applied to revenue figures per district to allow possible finance disparities to be measured horizontally prior to analysis for disparity. Table 1 provides a step-by-step summary of the methodology utilized to adjust student numbers and revenue to ascertain the average cost per pupil, per district.

Capital outlay for facility acquisition and construction--including such items as buildings, furnishings and the allied debt service to finance such projects--typically from bonded debt--was excluded from analysis. These expenditures are considered as "investment" spending or

long term expenditures, which cannot be readily attributed to the cost of educating a student in a particular year.[14]

Data Source

Actual enrollment figures were utilized for 1985-1986.[15] Revenue data for 1985-1986, drawn from the Foundation Master File 1985-86, Texas Education Agency, were utilized for State aid amounts. They included budgeted current operating expenditures minus: transportation, co-curricular activities, food service, debt service and building funds.[16]

State aid includes both Foundation School Program (FSP) revenue and add-ons funded wholly by the State but excluded bilingual summer school revenue. The State share of FSP costs includes regular, special, vocational, bilingual, compensatory, and gifted and talented education, career ladder and education improvement. The add-on aids are comprised of enrichment equalization aid, experienced teacher allotment, transition aid and the disadvantaged pre-kindergarten allocation. For local revenue, district tax levy figures were drawn from 1985-86 Texas Budgets,[17] operating revenue. Funds 10 and 80 were included and co-curricular/enterprising (5750) eliminated.[18] Intermediate revenue was also included under local revenue.

Measures Utilized in the Analysis

The following measures were utilized in the analysis of equity.

-- **Quintiles**, including per pupil revenue as defined herein, divided by adjusted, weighted pupils, were compared, at equal percentage intervals.[19]

-- The **Mean** and the **Median** (see footnote for quintiles as it relates to the median) were calculated to describe the distri-

bution, as well as to aid in interpretation of the Coefficient of Variation and the McLoone Index. The Standard Deviation was also calculated for this purpose in addition to the purpose of providing information on variability.

-- The **Range** and the **Restricted** range were calculated to determine the difference between the highest and lowest per pupil revenues in the State, and to determine the difference between the revenue per pupil, for example, at the 95th and 5th percentile. The restricted range was calculated to determine the equitability of the proposal without consideration to the tails of the distribution, which may be considered the result of local control variables, outliers or anomalies in the distribution. The ratio, e.g., the highest value divided by the lowest value, was also calculated for both measures.

-- The **Federal Range Ratio** was determined by taking the difference between the total revenue available for students at the 95th and the 5th percentiles and dividing that figure by the value at the 5th percentile.[20]

-- The **Coefficient of Variation**, the standard deviation of a distribution divided by the mean, expressed as a percentage, e.g., multiplied by 100, was calculated. As the coefficient of variation approaches zero, equality becomes greater. This measure determines variability around the mean observation and assumes a normal distribution.

-- **Gini Index**, was calculated to indicate how far the distribution of revenues was from providing each portion of students

with equal proportions of revenues. Values for the Gini Coefficient fall between 0.0 and 1.0. As the Gini Index approaches 0.0 the degree of equity increases.

-- The **McLoone Index** weighs the lower half of the distribution more heavily than the other measures and was calculated to determine the affects of a proposal on districts with per pupil revenues below the State's median expenditure level. It measures the percent of current revenues required to raise the expenditure level of each per pupil unit to the State median level. It is expressed as the ratio of the actual revenue of students below the median to the total, if all students were at the median. The closer a McLoone index is to 1.0, the greater the equity for the bottom half of the distribution. This is the only measure considered in this analysis where larger numbers indicate greater equity; it ranges from 0.0 to 1.0.[21]

-- The simple **Correlation** between per pupil revenues and per pupil equalized assessed valuations e.g., district property wealth,[22] was calculated to determine the relationship between those variables. A correlation approaching zero--showing no relationship between these variables--indicates the most equity. General terminology for describing the relationship measured by the correlation coefficient was utilized throughout: a correlation between 0.0-0.1, little or no relationship; 0.2-0.3, low, slight; 0.4-0.7, moderate; and 0.8-1.0, strong. The Pearson product moment correlations

range from -1.0 to 1.0; negative numbers imply an inverse relationship. Correlations were run including (1) all observations, and including (2) all observations to the 99th percentile of total State ADA, and (3) all observations to the 95th percentile of total ADA. Prior to deleting the upper tail of the distribution, districts were ranked from low to high by wealth per pupil. Correlations were run with observations excluded to determine if the relationship found for all observations was spurious, e.g., if it would persist with extremes removed.

-- **Regression.** Per pupil total state and local revenues were regressed on per pupil property values.[23] Slopes and elasticities were reported to provide an indication of the strength of the relationship. Regressions included (1) all observations, (2) all observations to the 99th percentile, and (3) all observations to the 95th percentile. These analyses were undertaken to determine the effects of the upper tail of the distribution and the explanatory power of the statistic with the upper tail removed.

Figure 1 provides a summary of alternative equity criteria utilized in this analysis which are indicated by an asterisk. It shows that children were the unit of analysis; the object included price-adjusted dollars (inputs), and student achievement data (outputs).

Horizontal equity was measured. The summary statistics included the range, the restricted range, the Federal range ratio, the McLoone Index, the coefficient of variation, the Gini coefficient, the simple correlation, the bivariate Regression, the simple slope, and the simple elasticity.

RESULTS OF ANALYSIS

This section describes the results of the analysis of the weighted pupil Foundation School Program (FSP) in Texas, 1985-86. It is divided into two parts. The first part presents Pearson Product Moment correlations for selected variables including teacher salary, tax rates, and test scores. Part two provides data on the equity of the Foundation School Program for 1985-86.

Correlations

This section discusses five sets of Pearson product moment correlations and relates them to selected student, district, and Foundation School Program variables.[24] They include: (1) wealth, operating cost, revenue, and fund balance, (2) M & O tax rates, I & S tax rates, and total tax rates; (3) beginning, average, total teacher salary and career ladder supplement; (4) special populations, i.e., special education, vocational education, compensatory education, bilingual education, and gifted and talented education; and (5) Foundation School Program elements including: the Price Differential Index (PDI), the small district allotment, equalization enrichment, and the experienced teacher allotment. Appendix A contains calculations for the mean, standard deviation, sum, minimum and maximum for each variable discussed in the correlation

analysis.

Correlation Between Wealth, Operating Cost, Revenue, Fund Balance, and Selected Variables

Correlations between wealth, operating cost, revenue, fund balance, and selected variables are described below.

Wealth. Pearson product moment correlations derived to show relationships between school district wealth, operating cost, revenue, fund balance, and selected variables are presented in Table 2. With regards to wealth, it was found that wealthy districts are moderately related to higher:

-- operating revenue per pupil ($r = 0.595$; $r^2 = 0.354$)

-- teacher salaries ($r = 0.446$; $r^2 = 0.199$)

-- local enrichment per pupil ($r = 0.721$; $r^2 = 0.520$)

-- local, local and State, per pupil revenue ($r = 0.762$, 0.647, respectively; $r^2 = 0.581$, 0.419, respectively)

-- equalization transition aid per pupil ($r = 0.415$; $r^2 = 0.172$)

-- local fund assignment ($r = 0.730$; $r^2 = 0.533$)[25]

Wealthy districts received proportionately less State aid per pupil ($r = -0.624$), less (or no) equalization enrichment revenue ($r = -0.527$) and had higher local fund assignments ($r = 0.730$). A moderate relationship was found between wealth and operating cost ($r = 0.595$) and wealth and total revenue ($r = 0.647$). However, the amount of variation explained for wealth and operating cost was low ($r^2 = 0.354$), as was the variation explained by wealth and total revenue ($r^2 = 0.419$). The local revenue variable, while explaining about half of the variation by wealth ($r^2 = 0.581$) must be considered only in tandem with State

revenue (which results in the total revenue variable).[26]

The per pupil property wealth of a district was found to have little or no relationship (e.g., wealthy districts were as likely as nonwealthy districts to be related) to:

-- district size ($r = 0.166$; $r^2 = 0.028$), or density ($r = 0.019$; $r^2 = 0.000$);

-- the Price Differential Index (PDI) ($r = 0.010$; $r^2 = 0.000$);

-- minority students as a percentage of total students ($r = 0.122$; $r^2 = 0.015$);[27]

-- the percentage of ninth graders passing all sections of the Texas Assessment of Basic Skills ($r = 0.161$; $r^2 = 0.026$);

-- maintenance and operations (M & O) tax rate ($r = -0.059$; $r^2 = 0.003$);

-- special populations ($r = 0.104$ to 0.188; $r^2 = 0.011$ to 0.035);

-- experienced teacher allocation ($r = -0.001$; $r^2 = 0.0000$);

-- teacher experience level ($r = 0.153$, 0.149, $r^2 = 0.023$, 0.022, for 1985-86 and 1986-87, respectively).

In sum, wealthy districts tended to have more revenue (inputs) but were unable to realize an experienced teaching force or higher test scores (outputs) as a result of this perceived revenue advantage. They were charged proportionately higher shares of the Foundation School Program and received little or no State aid and enrichment equalization funding.

Operating Cost, Total Revenue, Local Revenue. Correlations between each of the variables--operating cost, total revenue, local revenue--and selected factors, revealed similar trends to those noted

above. This may be explained through an examination of their inter-relationships as shown below:

	Operating Cost	Total Revenue	Local Revenue
Operating Cost	1.00	0.907	0.785
Total Revenue		1.00	0.838
Local Revenue			1.00

In the case of each variable, there was a moderate relationship between it and beginning, and average teacher salaries (which explained 0.151 in the variation at most), and a low relationship to experienced teachers.[28] No relationship was found between the above variables, i.e., operating cost, total revenue, local revenue (or local enrichment); and special program pupils. That is, districts that measured high on each of these variables were as likely as not to have students in special education, bilingual education, vocational education, compensatory education or gifted and talented programs. Districts with higher: operating costs ($r = 0.385$), total revenue ($r = 0.402$), and local revenue ($r = 0.308$) (and local enrichment, $r = 0.417$), tended to have higher M & O tax rates; no relationship was found between wealthy districts and M & O rates. Thus, higher revenues, and higher operating revenue (and enrichment) may tend to be related to higher taxes. Little variation can be explained by these factors and M & O rate, however.[29]

No relationship between either operating revenue, or total revenue, could be found to exist between the following variables: the Price Differential Index, size, or interestingly, test scores.

State Revenue. In contrast to wealthy districts, districts receiving larger relative shares of State aid generally were compensated for lower per pupil property wealth ($r = -0.625$), and lower local enrichment ($r = -0.718$) through larger total State aid; and through larger targeted State equalization enrichment ($r = 0.922$). They generally had more hispanic students ($r = 0.470$), fewer black students ($r = -0.260$) and more students who qualified for free and reduced price lunch as a percentage of the total district student population ($r = 0.518$).

A low to moderate, negative relationship was found between districts receiving higher State revenue and special program populations (for gifted and talented, $r = -0.347$; vocational, $r = -0.331$; special education, $r = -.322$; compensatory education students, $r = -0.202$; and bilingual education students, $r = -0.177$). State revenue and teacher salaries exhibited a low, negative correlation ($r = -0.619$, $r^2 = 0.383$, for average teacher salary; $r = -.525$, $r^2 = 0.276$ for mean beginning teacher salaries) as did State revenue and test scores ($r = -0.291$). A low, positive relationship to career ladder supplement ($r = 0.233$) was found for this variable.

Districts with higher shares of State revenue tended to be small rather than large ($r = -0.324$), but showed no relationship to density, i.e., students per square mile (they were as likely as not to be sparse, $r = -0.087$). They showed a moderate, positive relationship to I & S rate ($r = 0.358$, $r^2 = 0.128$), but a weak, negative relationship to M & O rate ($r = -0.110$) and a weak, positive total tax rate correlation ($r = 0.129$).

Beginning Fund Balance and Fund Balance as a Percent of Total Revenue. Larger beginning fund balances were found to be moderately associated with wealth (r = 0.367), operating cost per pupil (r = 0.451), small district adjustment per pupil (r = 0.409)--and, correspondingly, smaller refined ADA (r = -0.234)--total per pupil State and local revenue (r = 0.546), local revenue (r = 0.410), and local enrichment (r = 0.454). Fund balance amounts were intercorrelated with the variable, fund balance as a percent of total revenue (r = 0.879), as might be expected.

Higher beginning fund balances did not relate to average or beginning teacher salaries (r = 0.042, 0.016, respectively), or percentage of students passing all sections of the minimum competency test, TABS (r = 0.132). A moderate, negative relationship between fund balances and PDI (r = -0.328), numbers of special service students (r = -.0.218 to -0.239), size (r = -0.234) and density (r = a-0.254), was found.

Correlations Between Tax Rates and Selected Variables

Correlations between selected variables and total tax rates, maintenance and operations (M & O) tax rates, and interest and sinking fund (I & S) tax rates, are presented in Table 3. A low, negative correlation was found between total tax rate and minority percentage (r = -0.254): larger minority percentages were somewhat less likely to be in a high tax effort district. This was somewhat more true of hispanic than black populations, with the exception of hispanics and I & S rate (r = 0.020), and blacks and M & O rate (r = 0.017), where no relationship was found. Larger districts tended to have both lower total tax rates (r = -0.349), and lower debt service rates (r = -0.305). On the other

hand, growing districts had higher debt service rates, as might be expected (r = 0.336), but had lower M & O rates (r = -0.268). They showed no relationship to total tax rate (r = -0.024).

School districts with higher poverty counts, as measured by free and reduced price lunches, were weakly, negatively related to total tax rates (r = -0.230), M & O rates (r = -0.189) and I & S rates (r = -0.103). Also, wealth, as measured by property value per ADA, showed a low, negative correlation to total tax rates (r = -0.223), but no relationship to M & O rates (r = -0.059), and a slight, negative relationship to I & S rates (r = -0.272). Whether or not this latter relationship is spurious, given the very high values at the upper extreme of the property wealth variable, requires further investigation, however. As the negative values account for only 0.050 and 0.074 in the variation, i.e., r^2, of total tax rates and the I & S rates, respectively, across Texas districts the variation accounted for by these variables is so low as to be negligible.[30]

Weak to moderate, negative relationships were found between teacher salaries and debt service rates (r = -0.340; -0.342; -0.267, for average, total and beginning salary, respectively).[31]

Generally, special populations were found in districts with lower tax efforts (for total tax rates r = -0.339 to -0.377; for I & S rates, r = -0.257 to -0.325; for M & O rates r = -0.178 to -0.205). However, special pupils as a percentage of total district population did not relate to I & S rate (r = 0.004).[32]

No relationship was found between tax rates and per pupil allocations for the (1) Price Differential Index, (2) the small district

adjustment and (3) the equalization transition allotment. A moderate relationship was found between: debt service effort and (1) per pupil equalization enrichment (r = 0.436), (2) the local fund assignment as a percent of State aid (r = -0.410), (3) experienced teacher allocation per pupil (r = -0.391) and (4) the local fund assignment per pupil (r = -0.429). Thus, districts that tended to have stronger I & S efforts tended to receive higher compensation from the State in the form of equalization enrichment, experienced teacher allocation and had lower local fund assignments.

State revenue, exhibited a moderate relationship to I & S rate (r = 0.358). That is, more State aid tended to be allocated to districts with higher I & S rates and lower local revenue (r = -0.363). Enrichment, (total State and local; total local) on the other hand, provided a moderate, positive (r = 0.439, 0.417, respectively) relationship to M & O rate, but a negative relationship to I & S rate (r = -0.205; -0.293, respectively). It appears that a stronger M & O effort was related, as might be expected, to more local revenue; conversely, districts with lower local revenues received more State aid.

Finally, experienced teachers (1985-86, 1986-87) were moderately, negatively related (r = -0.391, -0.382) to district I & S rate. Neither total tax rates (r = -0.184, -0.178) nor M & O rates (r = 0.071, 0.071) were related to teacher experience variables, i.e., the minimum salary ratio, for 1985-86 or 1986-87, respectively. Finally, the percentage of students passing all sections of TABS, the Texas Assessment of Basic Skills minimum competency test, was not found to be related or showed only a slight relationship to M & O rate (r = 0.140), I & S rate (r =

0.100) or total tax rate (r = 0.186).[33]

Correlations Between Teacher Salaries and Selected Variables

Pearson product moment correlations between selected variables and 1) beginning teachers salaries, 2) average teacher salaries, 3) career ladder supplements, and 4) total salaries, appear in Table 4.

According to these data, there is no relationship between teacher salaries and tax rate (r = -0.075 for beginning salary, r = -0.042 for average salary, r = -0.070 for total salary). I & S rate and beginning salary (r = -0.266), average salary (r = -0.339) and total salary (r = -0.342) tended to be moderately, negatively correlated. Average salaries and total salaries showed a low, positive correlation to black student populations (r = 0.216, 0.218), indicating somewhat slightly higher salaries in districts with larger black populations. Total salaries were not related to hispanic populations (r = -0.087) or minority students as a percent of total district students (r = -0.065), e.g., districts with hispanic or minority populations were as likely as not to be paying high or low salaries.

Local enrichment (r = 0.507) and State and local enrichment (r = 0.423) both exhibited a strong, moderate relationship to total teacher salaries, as did total State and local revenue per pupil (r = 0.320).[34]

As would be expected, the Price Differential Index showed a moderately strong relationship (r = 0.600), to total salary, which decreased (r = 0.590) when the raw (unadjusted) PDI was utilized in the comparison. This results from the fact that the PDI was built on salaries and it was designed to address and compensate for differing costs of teachers across Texas, beyond the control of the local school

district. The possibility that more variation in teacher salaries was not explained by the PDI may result from the fact the PDI was built on minimum salaries, and that it was based on 1983-84 data.

District property wealth and teacher salaries were found to be moderately related ($r = 0.389$, $r = 0.381$, $r = 0.412$, for average, total--including career ladder in the average--and beginning salary, respectively)[35] as was local enrichment and operating revenue (for enrichment, $r = 0.440$ for beginning salary, $r = 0.531$ for average salary, $r = 0.507$ for total salary; for operating revenue, $r = 0.361$ for beginning salary, $r = 0.440$ for average salary, $r = 0.426$ for total salary). Data presented in the first part of this section indicated that wealthy districts did not maintain an experienced teaching force, however. This may suggest that they channel additional revenue into new and moderately less experienced teachers, i.e., front-load their salary schedule. Because these data did not consider top salaries in district, it is difficult to describe the entire landscape relating to salary in the State of Texas during 1985-86.

Districts with higher average daily attendance (ADA) ($r = 0.340$) and districts with high density ($r = 0.373$), showed moderately positive correlations to total teacher salary as did districts with larger special populations--i.e., gifted and talented ($r = 0.371$), bilingual ($r = 0.211$), compensatory ($r = 0.266$), special education ($r = 0.335$) and vocational education ($r = 0.364$) pupils. Thus, larger more densely populated districts and districts with larger special populations tended to pay higher teacher salaries.

Correlations Between Test Scores and Selected Variables

Correlations between (1) the percentage of ninth graders passing all sections of the Texas Assessment of Basic Skills (TABS) in 1984-85, and (2) the total standardized score of 11th graders on the Texas Educational Assessment of Minimum Skills (TEAMS), and selected variables respectively, are presented in Table 5. A strong, moderate, negative relationship was found between the test score variables and (1) minority students as a percentage of total students ($r = -0.699$ for TABS; $r = -0.695$ for TEAMS), (2) free and reduced priced lunch students as a percentage of total students ($r = -0.722$ for TABS; $r = -0.772$ for TEAMS), and (3) special pupils as a percent of total pupils ($r = -0.597$ for TABS, $r = -0.558$ for TEAMS). Special program pupils[36] showed a low or moderately, negative relationship to test scores ($r = -0.485$ to -0.391 for TABS; $r = -0.297$ to -0.182 for TEAMS), as did regular pupils ($r = -0.378$ for TABS; $r = -0.170$ for TEAMS).

Variables exhibiting no relationship to TABS or TEAMS test scores (respectively) included: teacher experience ($r = -0.079, -0.043$); I & S tax rate ($r = 0.100, 0.079$); M & O rate ($r = 0.140; 0.120$); and operating cost per pupil ($r = 0.005, 0.042$). The latter correlation underscores the point made with regards to wealth, that higher revenues did not exhibit any relationship to test scores.

Low relationships found between the test score variables and, for example, local enrichment per pupil ($r = 0.296, 0.365$); local revenue per pupil ($r = 0.255, 0.344$); State and local enrichment per pupil ($r = 0.267; 0.303$); equalization transition per pupil ($r = 0.286, 0.335$), equalization enrichment per pupil ($r = -0.258, -0.395$); lose meaning

when viewed as a whole, e.g., as total State and local revenue per pupil,s which exhibits a weak relationship to test scores (r = 0.136, 0.163) for TABS and TEAMS, respectively.

In sum, the variables considered in this section indicate that minority students and poor students are at risk: they record the lowest scores on TABS and TEAMS tests.[37] Little useful information explaining relationships to high scores was found, however, to provide a strategy for improvement that could be targeted to these students. No doubt, increases in test scores are related to more complex sets of variables, some difficult to measure, e.g., school climate, workplace conditions, leadership variables.

Correlations Between Foundation School Program Elements and Selected Variables

Correlations between Foundation School Program elements and selected variables are presented in Table 6. Foundation School Program elements discussed include: The Price Differential Index, the Small District Adjustment, Equalization Enrichment, the Experienced Teacher Allotment and the Local Fund Assignment.

The Price Differential Index. The PDI showed no relationship to wealth (r = 0.010), operating cost per pupil (r = -0.006), equalization transition aid (r = -0.009), local revenue per pupil (r = 0.052), local enrichment per pupil (r = -0.009), or experienced teacher allocation per pupil (r = 0.065). Larger districts (i.e., higher refined ADA, r = 0.569) and higher density areas (r = 0.727) e.g., urban areas, tended to have higher PDI's. Districts with larger numbers of special program pupils (r = 0.591) also tended to have higher PDI's.

Lower PDI's tended to be related to: districts receiving the small district adjustment (r = -0.675); larger percentages of fund balance of total revenue (r = -0.330), larger beginning fund balance per pupil (r = -0.328), higher equalization enrichment per pupil (r = -0.247), and higher State revenue per pupil (r = -0.268), although the latter variables are only slightly related.

In sum, the PDI did not relate to wealth or local enrichment; it tended to be higher in urban areas, and in districts with more special program pupils. Apparently it addresses differences in the cost of living, not the standard of living.

The Small District Allotment. The Small District Allotment was moderately related to fund balance (r = 0.409 for beginning fund balance; r = 0.314 for percentage fund balance of total revenue); total State and local revenue (r = 0.430); and operating revenue (r = 0.277). The small district allotment tended to not be related to special program pupils (r = -0.229, -0.224, -0.192, -0.177, -0.225, for special education, vocational, compensatory, bilingual, and gifted students, respectively) or minority students as a percent of total students (r = -0.203). Small districts were not related to wealth (r = 0.143), or tax rates (r = 0.055, 0.097, -0.047 for total, M & O, and I & S tax rate, respectively.)

Equalization Enrichment. Districts that received higher shares of equalization enrichment also tended to have more hispanic students (r = 0.517), larger I & S rates (r = 0.436) and children in poverty (r = 0.510--measured by the free and reduced price lunch count). Equalization enrichment showed a negative relationship to wealth (r = -0.527), to average teacher salary (r = -0.561), to local revenue per pupil (r = -

0.764), to equalization transition allotment per pupil (r = -0.459), and local enrichment per pupil (r = -0.653). Districts receiving larger equalization enrichment allocations per pupil had lower local fund assignments (r = -0.844) and received more State aid (r = 0.922). It should be noted that this variable should be considered as part of the total State and local total revenue variable, of which it is part.s

Experienced Teacher Allotment. The experienced teacher allotment was allocated to districts that had more experienced teachers than the Statewide average. Districts receiving this allotment tended to have relatively more black students (r = 0.453), and lower I & S rates (r = -0.307). Little or no relationship was found between the experienced teacher allotment and such variables as: wealth (r = -0.001), operating cost per pupil (r = 0.045), and total State and local revenue (r = 0.009).

Local Fund Assignment. Districts that had higher local fund assignments (LFA) also tended to have higher property wealth per pupil (r = 0.697), higher average teacher salaries (r = 0.614) and beginning teacher salaries (r = 0.537), higher equalization transition allotments (r = 0.618), higher local revenue per pupil (r = 0.901), higher local enrichment per pupil (r = 0.778), and higher operating revenue per pupil (r = 0.559). Districts that had lower local fund assignments (LFA) tended to receive more equalization enrichment (r = -0.873) and more State revenue per pupil (r = -0.951).

No relationship or a weak relationship was found between LFA and total tax rate (r = -0.169), M & O tax rate (r = 0.101), minority students as a percentage of the total (r = -0.176), density (r = 0.122),

small district adjustment (r = -0.030), experienced teacher allocation (r = 0.171), or percentage beginning fund balance of total revenue (r = 0.056).

Correlations Between Special Program Pupils and Selected Variables

Table 7 presents correlations between the number of special program pupils and selected variables. As might be expected, the number of special program pupils was strongly related to size (r = 0.955 to 0.996). Because of the high intercorrelation between size and special program pupils little additional information was found beyond relationships previously discussed as they relate to size. An examination of special program pupils as a percentage of district population (ADA) is therefore suggested in future research and to discern the relationships between selected variables and special populations, by districts across size variables.

Changes in Correlation Coefficients Over Time

Table 8 presents changes in correlation coefficients over time, between wealth, operating expenditures, teacher salary, equalization enrichment, experienced teacher allocation, equalization transition; and wealth, average daily attendance, percent black and percent hispanic, respectively.

Wealth. Changes in the relationship between wealth per pupil and percent black and percent hispanic appear to have lessened over the two year period 1983-84 to 1985-86, though insignificantly (r change = -0.036, -0.053, respectively). Whether or not this has resulted from reassessed property cannot be derived from the data. Conversely, the

relationship between size and wealth has increased but again insignificantly (r change = 0.005). It should be noted that the correlations between size and wealth, percent hispanic and wealth, and percent black and wealth for either 1983-84, or 1985-86, show a low relationship.

Operating Expenditures. A moderate but declining relationship over time was found between operating expenditures and wealth (r change = -0.015). No significant change over time was found between operating expenditures and ADA, (r change = -0.005), percent black, (r change = -0.086) or percent hispanic, (r = 0.195), change.

Teacher Salary. A moderate positive relationship was found between district wealth and beginning teacher salary which declined over a one year period (r = -0.022). For teacher salaries and black percentage, a weakening of relationships was found (r change = -0.140, -0.094 for beginning and average teacher salaries, respectively), while for hispanics the former moderate relationship with low beginning and average teacher salaries had changed to a weak relationship over time (r change = 0.211, 0.193, respectively).

Price Differential Index. No relationship was found between the 1985-86 price differential index and wealth (r = 0.010). Although the prior index (1984-85) correlated weakly to wealth (r = 0.204), this appears to have been corrected in 1985-86 (r change = -0.194). Over time, larger districts benefitted more from the index (r = 0.168) as did districts with higher percentages of hispanic students (r change = 0.272). Districts with higher percentages of black students benefitted more from the 1985-86 PDI (r change = 0.046).

Equalization Enrichment. In 1985-86, a moderate, negative relationship was found between the equalization enrichment allotment and wealth per pupil (r = -0.527), district size (r = -0.356, ADA) and percent black (r = -0.331). This indicated that non-wealthy districts, small districts and districts with smaller percentages of black students generally received larger shares of enrichment equalization. This trend increased, though insignificantly, over time except for districts with higher wealth where a lessening of the relationship (-0.057) occurred. Districts with higher percentages of hispanic students received more enrichment equalization (r change = +0.081) over time.

Experienced Teacher Allotment. For 1985-86, moderate correlation was found between the experienced teacher allotment and black student percentage (r = 0.453)--which increased over time (+0.125). A low correlation (r = 0.230) was found between district size and experienced teachers which decreased (-0.092) over time. No relationship was found between experienced teachers and either wealth (r = -0.001) or percent hispanic, which decreased from 1984-85 to 1985-86 (r = -0.724).

Equalization Transition. A moderate correlation was found between the equalization transition allotment and wealth (r = 0.415), which increased over time (r change = 0.873). No relationship between ADA (r = -0.046), percent black (r = -0.017), and equalization transition was found. A low negative relationship between percent hispanic (-0.281) and equalization transition was found, which decreased over time (-0.105).

The Equity of the Foundation School Program

This section discusses the results of the equity analysis of the Foundation School Program in 1985-86. The equity of the Foundation School Program was calculated utilizing various established statistical techniques and measures. The results of this analysis are shown in Table 9, for all districts and for all districts excluding sparse districts, as define in current law.[38]

Results of Analysis

For the school year ending in 1986, Texas had average State and local revenues per pupil of $2,390.00. The coefficient of variation for that year was 15.9, which means that about two-thirds of all students were within 15.9 percent ($380.00) of the Statewide average revenue per pupil, and that more than nine-tenths of the students were within 31.8 percent ($760.00) of the Statewide average. The McLoone Index was .933, which means that in the bottom half of the distribution, only 6.7 percent (1.0-.93) of the revenue of the median pupil would be needed to bring the bottom half of all students up to the revenue per pupil of the median student. For example, the McLoone Index was .933, the median per pupil revenue was $2305.00 and there were 2,875,987 pupils in the State. Then (1.0 - .933) x $2305 x (.5 x 2,875,987) or $222.1 million in State revenue would be needed to bring all pupils below the median level of State aid to the median level. The Gini Coefficient was .075 indicating that for approximately 92.5 percent (100-7.5) of the distribution, equal percentages of students were provided with equal percentages of revenues. The restricted range was $965.00, which means that there was a $965.00 difference behind the revenue per pupil of the student at

the 95th percentile, compared to the student at the 5th percentile. The range was a $9,781.00 which means there was a difference of $9,781.00 per pupil between the revenue of the maximum and minimum value.[39] The relationship between revenue per pupil and wealth per pupil was .60 as indicated by the correlation,[40] but only .0010 as indicated by the slope, which means that a one dollar change in wealth per pupil was associated with just a 1/10th of a cent change in revenue per pupil (or a change of one thousand dollars in wealth is associated with change of one dollar in revenue per pupil). The elasticity was 0.099 indicating that a one percent change in wealth represents .099 change in revenue. Or, put another way, a ten percent change in wealth represents a less than a one percent change in revenue; or a 50 percent change in wealth represents less than a five percent change in revenue. The elasticity, like the slope, represents a relationship of low magnitude. The Federal Range Ratio, the restricted range at the 95th and 5th percentile, divided by the value at the 5th percentile, was 0.48. The restricted range ratio was 1.48.

National Comparisons, 1976 and Cross Time Comparisons, 1976-1986

Tables 10-12 present revenue disparity statistics for 35 states in 1976,[41] ranked from the most equitable to the least equitable. These tables provide data for purposes of providing comparative information beyond the context of Texas, and for the purpose of comparing equity in Texas over a ten year time span, i.e., 1976-1986. It might be noted with regards to these time periods, 1976 was the first year of implementation of the financing system under prior law, H.B. 1126; 1986 represents the second year of a phased-in weighted pupil foundation program

enacted as part H.B. 72.

Table 10 provides comparative data for the restricted range and federal range ratio; Table 10 provides comparative data for the McLoone Index and the Coefficient of Variation; Table 12 provides comparative information for the simple correlation coefficient and on the simple elasticity. In comparing the 1986 Texas figures with the 1976 figures all measures show improvement which indicates greater equity over time. These data are presented on Table 13.

Distribution of Revenue by Percentage of Pupils

Further examination of total State and local revenue per pupil at five percent intervals was undertaken to aid in the description of the distribution of revenue across all students and to provide detailed explanatory information with regards to the differences observed in the values for the range versus the restricted range. It was found that (with the exception of for the bottom 5 percent of students) the largest increase in revenue per pupil was approximately five percent ($144.00) from one interval to the next, except for the interval from the 95th to the 100th percentile, where the revenue per pupil increased by approximately 287 percent ($8,513.00). Examination of revenue per pupil for this interval, i.e., 95th to 100th, by one-half of one percent increases, showed further that the percentage increase from one interval to the next ranged from approximately 2 percent ($68.00) to 8 percent ($239.00) with the exception of the interval from 99.5 percentile to the 100th percentile, which showed a striking increase in revenue per pupil ($7,417.00)--183 percent. These data are presented in Table 14, Figure 2, and Figure 3. They show a fairly flat distribution of revenue

per pupil described above except for the values located at the upper extreme. Thus, a large portion of difference in total State and local revenue per pupil in Texas appears to be confined to approximately one-half of one percent of Texas students, or less. No doubt, this unusual distribution of total revenue per pupil likely has a distortionary affect on the statistical measures utilized to assess equity. Odden, Berne, and Stiefel, writing on equity in 1976, stated:

> . . . a very few, very small districts with extremely large revenues per pupil could produce statistical results that indicate substantial Statewide revenue per pupil differences when the problem is localized for a few districts. This could be an issue in Texas (emphasis added).[42]

Reanalysis of Equity by Percentage of Pupils

It was deemed necessary to determine whether or not the disparity measured in the equity statistics for 1985-86 were the result of Statewide revenue per pupil differences, or if a large part of the variation was localized, that is, due to the influence of a few small districts with relatively high per pupil revenues, but few total pupils. Thus, the strength of the relationships found in the equity analysis for all students was compared to the strength of the results when 1) 99 percent of the total students, ranked by revenue per pupil, were included, and 2) when 95 percent of the total students were included Statewide. These data are presented in Table 15 and in Figure 4. Table 16 presents the same analysis but excludes sparse districts according to current law definitions.

The data show that when one percent of total students were excluded from the analysis, the coefficient of variation was reduced 17 percent, from 15.89 to 13.16. With five percent of total pupils excluded from the analysis, a 36 percent change in the coefficient of variation, from 15.89 to 10.16, was found. The mean changed little. It was $2370.00 when one percent of pupils were excluded from analysis; it was $2324.10 when five percent of pupils were excluded from analysis. The Gini Coefficient was reduced to .068 (9 percent) when calculations included 99 percent of total pupils. It was reduced to 0.56 (25 percent) when 95 percent of total pupils were included in the analysis. The Federal range ratio, which uses values at the 95th and 5th percentile, did not change when one percent of total pupils were excluded at the upper extremes. It was reduced 16 percent, from .48 to .41, when five percent of total pupils were excluded. The McLoone Index, which weighs the lower half of the distribution more heavily, was not affected by the exclusion of pupils from the upper extreme, as might be expected. Perhaps most striking of all changes noted, was the reduction in the range, which showed a 79 percent change ($7,746.00) when only one percent of the total population of students was omitted from the analysis; it showed an 87 percent change ($8,516.00) when the analysis excluded five percent of the total students. The range was $2,035 and $1,265 per pupil, for 99 and 95 percent of total pupils, respectively. With the exclusion of 5 percent of total pupils, the range ratio--the ratio of the highest to lowest value--changed from 6.77 to 1.75. For the restricted range, little or no change was noted when one percent of total students were excluded from analysis. When five percent of total

students were excluded from analysis, however, the restricted range at the 95th and 5th percentile showed a 17 percent change (from $965.00 to $808.00); at the 10th and 90th percentile the restricted range showed a 15 percent change (from $716.00 to $606.00). The differences found in the analysis were similar when sparse districts were excluded. Due to the relatively small numbers of students in these districts, their influence on most measures utilized was minimal.

Correlations, Regressions, and Slopes

The influence of the exclusion of both one and five percent of total pupils on the statistical results in the equity analysis was further tested. The relationship between per pupil property wealth and total State and local revenue per pupil was examined using simple correlations, bivariate regressions and simple slopes. It included all revenue per pupil, and (a) all revenue per pupil for 99 percent of total pupils and ranked by revenue from high to low, (b) all revenue per pupil for 95 percent of total pupils. These calculations were undertaken utilizing two wealth measures: (a) actual per pupil[43] property values utilized for the calculation of the Local Fund Assignment (LFA) in the 1985-86 school year, for Foundation School Program revenue,[44] and (b) 1985 tax year property values.

These data, presented in Table 17, show that when all pupils are considered in the measure, a correlation of .60 and .62 was found, between per pupil revenue and the (a) 1986 LFA property value and the (b) 1985 tax year value, respectively. The regression showed that wealth accounted for approximately 37 percent in the variation in revenue per pupil, that is, less than two-fifths of the variation in per pupil

revenue could be explained by property values. The relationship between wealth and revenue was of low magnitude as indicated by the slope of .0010, indicating that a one dollar change in wealth per pupil would be accompanied by only a one-tenth of one cent change in revenue per pupil, and as indicated by the elasticity, as previously discussed.

The correlation, regression, slope and elasticity show a reduced relationship between wealth and revenue when either 99 percent or 95 percent of the pupils were included in the analysis. When 95 percent of all students were included, for example, the correlations were reduced to .41 and .43, for 1986 LFA values and 1985 values, respectively, accounting for less than one-fifth of the variation in per pupil revenues (17 percent and 19 percent). The slope was increased from .0010 to .0009 for either property value, indicating, again, a relationship of low magnitude.

SUMMARY

In sum, these analyses showed the substantial distortionary affects of one to five percent of the upper extreme of total students, ranked by revenue per pupil, on the measurement of equity in Texas education finance. Further, the data indicated improvement over time in the long struggle of equalizing resources in the State of Texas and, thus, a robust response by lawmakers to issues raised by Rodriguez. However, vigilance must be exercised lest one is lulled into the belief that no further action is necessary or into thinking that gains evidenced by these measures will be self-maintaining. The dual problems of a rapidly increasing school population and an economic recession brought on by the reduction of oil prices, if they continue, bode ill for an

optimistic appraisal for the future of Texas education finance equity. And, despite efforts by legislatures such as the Texas General Assembly, interstate differences in financing education must soon raise thorny questions so often lost in State level analysis. As the citizens of one Nation continue to seek equal protection of life, liberty and the pursuit of happiness under the law--rights built on the foundationstone of equality in educational opportunity--the day of reckoning must soon dawn when once again a challenge to the system of education finance reaches the highest tribunal in the land. This time, perhaps, the federal system of financing education will be called into question, seeking redress to the substantial lack of national involvement in achieving school finance equalization for all the diverse sectors of our education landscape--our country's greatest resource and the hope of our Nation's future into the 21st century.

[1]Cf. Deborah A. Verstegen, Richard Hooker, and Nolan Estes, "A Comprehensive Shift in Educational Policymaking: Texas Education Reform Legislation," in Van D. Mueller and Mary P. McKeown, eds., The Fiscal, Legal, and Political Aspects of State Reform of Elementary and Secondary Education (Cambridge, Ma.: Ballinger, 1986), 277-308.

[2]San Antonio Independent School District vs. Rodriguez, 411 U.S. 1 (1973).

[3]Although the new finance system was implemented in 1984-85, a number of major provisions had not been phased-in, e.g., the basic grant was $1290 per pupil versus the current $1350; the education index was temporary for 1984-85; and the special education weights had not been implemented. Thus, 1985-86 was the first year for which reliable data were available.

[4]C.f., Robert Berne and Leanna Stiefel (1984). The Measurement of Equity in School Finance: Conceptual Methodological and Empirical Dimensions. Baltimore, Maryland: The Johns Hopkins University Press.

[5]The comparison of district versus student units of analysis is provided below to illustrate the distortionary affect of utilizing the incorrect unit.

Unit of Analysis	Number of Pupils	Average Dollars/Per Pupil		Total Funds	Statewide Average Dollars Per Student
Student Unit					
District 1	5	$ 20.00	=	$100.00	
District 2	1	100.00	=	100.00	
				200.00/6	= $33.3 per student
District Unit					
District 1	5	20.00	=	20.00	
District 2	1	100.00	=	100.00	
				120.00/2	= $60.00 per student

[6]One full time equivalent unit was based on 30 contact hours per week between student and teacher.

[7]Robert Berne, personal communication with the author, November, 1986.

[8]Small district figures were taken from base year impact model (1986-87). The Foundation Master File (FMF) does not retain data at this level of detail.

[9]"An analysis using weighted pupils, in effect, combines the equal treatment of equals and unequal treatment of unequals into a single assessment of equity." Education Finance Center, Education Commission of the States, (1979). Equity in School Finance, Report No. F797-9. Author: Denver, CO, p. 64.

[10]See, Berne and Stiefel, op. cit.

[11]Transportation figures were taken from the Foundation Master File. Transportation figures serve as a proxy for sparsity in many cases and do not relate to difference in student program costs. According to Berne and Stiefel,"Of all the components of current operating expenditures [and total state and local revenue], the variation in transportation expenditures relates least directly to a child's educational experience." Op. cit., 1984, p. 122.

[12]See here, Jay Chambers (1979), "Cost of Education Indices: A Discussion Paper," The New York Task Force on Equity and Excellence in Education Denver, Colorado: Education Commission of the States. Chambers states that "If a cost of education index is adopted then expenditure [and revenue] figures must be deflated by this index so that disparities are measured in real rather than nominal terms" (p. 15). The PDI utilized was the raw index proposed in 1985-86. Texas Education Agency (1986). Report of the Price Differential Index Advisory Committee to the State Board of Education. Austin, Texas: It was utilized to deflate the aggregate unit of analysis, e.g., total state and local revenue, both including and excluding sparse districts for baseline equity data. (As per personal communication, R. Berne, July, 1986). According to Berne and Stiefel, "school finance equity analysis should, at the very least, use price-adjusted dollars. If only one object is used, price adjusted dollars is preferable. Berne and Stiefel (1984), op. cit.,p. 280.

[13]The formula for the Adjusted Revenue is: (LOCREV + STAID - TRAN) / RAWPDI). LOCREV = local revenue, STAID = state aid, TRAN = transportation, PDI = 1985-86 proposed index with no adjustment.

[14]C.f., Finch, J. (1967). An Analysis of Financial Measures as Related to Certain Measures of Quality (doc. diss.). Teachers College, Columbia University: N.Y., N.Y.

[15]Student counts for 1985-86 were taken from Superintendent's Report of Pupil Attendance and Contact Hours, Fall 1985 and Spring 1986, and National School Lunch Program Report 1984-85, Texas Education Agency, Austin, Texas. For total students, vocational education students, special education students, and bilingual education students: total FTE's in average daily attendance (average of best 4 of 8 weeks during which attendance was reported) by program were utilized. For special education, FTEs by instructional arrangements were utilized. For compensatory education students, the best 6 months average of number of students participating in the National Free and Reduced Lunch Program

during the prior school year (1984-85) was utilized. For gifted and talented students, the total number of students in gifted and talented programs and for whom gifted and talented programs were being developed for fall 1985 and spring 1986, were included.

[16]Current operating expenditures included functions 10, 20, 30, 40, 50, and 70 in both the general fund (fund 10) and government expendable trust (fund 80).

[17]Official Budget for Texas Public Schools 1985-86, Texas Education Agency, Austin, Texas.

[18]Fund 10 is the general fund. Fund 80 is referred to as 'Government Expendable Trust Fund' on the budget and 'Fiduciary Fund Types-Trusts and Agency Funds' in the Texas Financial Accounting Manual (Bulletin 679). These types of funds are used to account for assets held by a district as an agent or in a trustee capacity. An example would be a fund to account for operation of a special education cooperative for which the district serves as fiscal agent.

[19]Quintiles reported by SAS, the statistical package utilized throughout this analysis, do not take weighted pupils into account, thus requiring a separate analysis for range, restricted range, federal range ratio and percentile reporting. C.f. SAS Users Guide: Basics, Version 5 Edition (1985) SAS Institute, Inc.: Cary, NC, p. 1184. Extreme caution is therefore urged when actual output is utilized, as district units of analysis are not acceptable measures, nor in keeping with best practice or research knowledge. Percentiles and the restricted range were calculated utilizing the following methodology. First, the distribution of total state and local revenue per pupil for each district as defined herein was ranked in ascending order together with total pupils per district and cumulative pupils across all districts. The first observation at which, e.g., five percent of cumulative pupils was reached, identified the revenue object that was utilized. This procedure was repeated for each percentage point utilized in the study.

[20]C.f., 34, CFR, Ch. 11 (7-1-85).

[21]See footnote for quintiles. SAS was unable to locate the median pupil and selected the median district in its place. As a result, the median pupil required selection as described in footnote 23 and a separate calculation was undertaken.

[22]Property values included (1) 1985 calendar (tax) year and (2) 1985-86 school year values as utilized to distribute LFA; ADA was for 1985-86.

[23]Data sources and definitions for the variables utilized in the regression analysis are the same as those utilized in the correlational analysis. For property values, tax levies, and tax rates the following data sources were utilized throughout: State Property Tax Board Worksheet of 1985, certified property values corresponding to

1985-86 school year (certified property values are appraised values standardized to 100 percent of market value throughout the state). State Property Tax Board Self-Report of 1985 tax year levies reported by school districts (corresponding to 1985-86 school year). State Property Tax Board, Austin, Texas. For the property values utilized to compute the 1985-86 local fund assignment, 1984 tax values were utilized. Data sources were those cited above, but for the 1984 tax year.

[24]These correlations are based on actual figures. Thus, total State and local revenue does not reflect allowable adjustments needed prior to determination of the correlation coefficients when analysis is made for equity. The reader is therefore cautioned against extrapolating data from this section for purposes other than that intended, or in utilizing these data out of context. Correlations utilized for equity analyses are presented in the second part of this section.

[25]The loss of aid to budget balanced districts explains the correlation, which would be higher if adjustment for available fund (per capita) revenue had not occurred.

[26]It should be noted throughout that the correlations are tentative at best, as extremes in wealth variables, for example, may tend to overestimate or provide spurious relationships, and slopes and elasticities have not been calculated to determine their magnitude.

[27]There was no relationship between black students and wealth ($r = 0.111$). There was a low relationship between hispanic students and wealth ($r = -0.202$); district wealth accounted for only 4 percent in the variation of numbers of hispanic students across Texas districts ($r^2 = 0.0408$).

[28]The factor DAS/SAS was utilized to denote experience (TEC § 16.154), where DAS = district average classroom minimum salary, SAS is the statewide average minimum required per Texas Education Code.

[29]The highest $r^2 = 0.174$. Also, the possibility of M & O taxes being used by wealthier districts for building purposes has been raised. C.f. Strain, Sherri (1985). The Impact of HB 72 on the Equalization of School Finance in Texas (doc. diss.), The University of Texas: Austin, Texas. Also, districts which were receiving equalization transition aid were provided disincentives for raising I&S rates. Therefore, these data may not reveal the entire picture of I&S taxes in Texas.

[30]For Wealth and 1) total tax rate, 2) I & S rate, 3) M & O rate $r^2 = 0.050$, 0.074, and 0.003, respectively. Thus, wealth accounted for less than 7 percent (at most) in the variation in district's M&O, or I&S, or total tax rate.

[31]Little variation was explained by this variable, $r^2 = 0.116$, 0.117, 0.071 for average salary, average salary including career ladder, and beginning teacher salary, respectively.

[32]Perhaps the numbers, versus percentage of total district ADA, of special program pupils in the larger districts could provide a plausible explanation for this. That is, when the proportion of the district's population that was a special population was taken into account, no relationship was exhibited. When actual numbers of special population students were considered, a moderate, negative relationship was found.

[33]For percentage of students passing all sections of TABS, r^2 = 0.035, 0.020, 0.010, for total tax rate, M & O rate, and I & S rate, respectively.

[34]r^2 = 0.257, 0.179 for the variation explained by local enrichment and State and local enrichment respectively, in total teacher salaries. r^2 = 0.102 for the variation explained by total State and local revenue per pupil in total teacher salaries.

[35]As discussed previously, the correlation of teacher experience variables and wealth was very low, however (r = 0.153, 0.149) suggesting that the highest teacher salaries, related to an experienced force of teachers, would be correspondingly lower in wealthy districts. For the variation accounted for by wealth in average, total and beginning salaries, r^2 = 0.151, 0.145, 0.170, respectively.

[36]Special program pupils included special, vocational, bilingual and compensatory education. For gifted and talented students, there was no relationship to test scores found (r = 0.000, -0.185, for TABS and TEAMS tests, respectively).

[37]The correlation between minority and poor students was .884, indicating a relatively strong interaction between these variables.

[38]TEC, Chapter 2, § 16.104.

[39]According to Odden, Berne and Stiefel (1979), "Great care should be given to making conclusions about the equity of a state school finance system on the basis of . . . one statistic. . . ." Education Finance Center, op. cit., p. 39. This may be especially relevant for measures, like the range which are affected by inflation.

[40]See Table 17 for correlations, regressions, slopes and elasticities relating to revenue and wealth. The variation accounted for by the correlation was small (r^2=0.38). The property values utilized in computing both the correlations, regressions, and slopes were based on the 1984 tax year (January 1 to December 31, 1984). They were utilized for computing the local fund assignment in the Foundation School program for the 1985-86 school year. If property values declined more than 8 percent between 1984 (tax year) and 1985, however, the 1985 property values were used. It should be noted that this measure of property wealth provides a lag time between assessments and distribution of state aid; it was utilized to provide comparable data for the crosstime comparisons. The 1985 tax year property value correlation

with wealth was 0.62. Both calculations are presented for comparison, although, when cross time comparisons were not used, the more recent wealth measure is preferred.

[41]Source: Education Finance Center, Education Commission of the States, (1979), Equity in School Finance, Appendix C. Report No. F79-9. Author: Denver, Colorado. These data appear to be the most comprehensive, recent intrastate comparative measures available.

[42]Education Finance Center, Education Commission on the States (1979), op. cit., p. 39.

[43]The refined average daily attendance figure is utilized to denote pupils. It is the best 4 of 8 weeks count, as defined by the State Board of Education for 1985-86.

[44]This was based on the 1984 tax year (Jan. 1, 1983-December 31, 1984).

Figure 1

A Summary of Alternative Equity Criteria With
Those Utilized in the Methodology
Indicated by an Asterisk

Component of Equity Concept	Alternative for Each Component		
Who?		* Children	
The Group			
What?	Inputs	Outputs	Outcomes
The Object	-Dollars	*-Student Achievement	-Earning potential
	*-Price-adjusted dollars	-Behavioral output measures	-Income
	-Physical resources		-Satisfaction
How?	Horizontal Equity	Vertical Equity	Equal Opportunity
The principle	*-Equal treatment of equals; minimize spread in distribution	*-Unequal treatment of unequals; more objects to the needier	*-No discrimination on the basis of property wealth in school district or other catagories: minimize undesirable relaships
How Much?	Univariate Dispersion		Relationship
The summary statistic	*-Range		*-Simple Correlation
	*-Restricted range		*-Simple Slope
	*-Federal range ratio		-Quadratic Slope
	-Relative mean deviation		-Cubic Slope
	*-The McLoone Index		*-Simple Elasticity
	-Varience		-Quadratic Elasticity
	*-Coefficient of variation		-Cubic Elasticity
	-Standard deviation of logarithm		-Constant Elasticity
	*-Gini coefficient		-Adjusted Relationship Measure from Simple Regression
	-Atkinson's index		-Adjusted Relationship Measure from Quadratic Regression
	-Theil's measure		-Adjusted Relationship Measure from Cubic Regression
			-Implicit Weight
			-Averaged Implicit Weight

(Berne and Stiefel, 1984, p.9)

Table 1

An Illustration of a
Sample District Calculation

Part 1	
- State revenue (doesn't include bilingual summer school)	$ 4,030,712
- Local revenue (minus co-curricular/ enterprising)	$ 899,795
o Total state and local revenue	$ 4,930,507
- Transportation costs	$ 135,258
o Subtract transportation	$ 4,795,249
- Price differential index	1.00851
o Divide by price differential index	$4,754,786 *
Part 2	
- Regular education ADA	1,421.82
- Special education FTEs	91.69
- Vocational education FTEs	135.49
o Total average daily attendance	1,649.00
- Special education[1]	194.48
- Vocational education	60.75
- Bilingual education	12.55
- Compensatory education	9.19
- Gifted and talented education	48.00
o Add pupil differentials as per current law	1,973.97
- Small district weight	1.07148
o Add small district weight per pupil	2,115.07 *
Part 3	
* Revenue variable (Part 1)	$ 4,754,786
* Weighted ADA variable (Part 2)	2,115.07
Divide revenue variable by weighted ADA to derive revenue per student figure	$ 2,248

[1]Special education and vocational education weighted added include those weights over 1 FTE per pupil (which was included in the first section of Part 2). Each student in bilingual, compensatory, and gifted and talented education programs are weighted in accordance with current law.

Table 2

Pearson Product Moment Correlations Between Selected Variables, 1985-86 a/

	Wealth	Operating Cost	Total Revenue	Local Revenue	State Revenue	Beginn. Fund Balance	Percent Fund Balance of Total Revenue
Total Tax Rate	-0.223	0.152	0.197	0.042	0.129	0.053	0.038
Minority Students as % of Total	-0.122	0.079	-0.109	-0.233	0.280	-0.148	-0.176
Black as % of Total	0.111	0.011	0.004	0.157	-0.260	-0.083	-0.104
Hispanic as % of Total	-0.202	0.008	-0.122	-0.353	0.470	-0.099	-0.114
Price Differential Index	0.010	-0.006	-0.176	0.053	-0.268	-0.328	-0.331
Refined ADA--Best 4 of 8 Weeks	0.166	0.095	-0.050	0.162	-0.324	-0.234	-0.290
% 9th Grade Passing All Sec. TABS	0.161	-0.005	0.136	0.255	-0.291	0.132	0.131
Chg. in ADA, 1984 to 1985	-0.020	-0.317	-0.200	-0.121	-0.000	-0.090	-0.045
Density: Students per Square Mile	0.019	0.045	-0.073	0.007	-0.087	-0.254	-0.308
Lunch: Comp. Ed. as % of Total	-0.228	0.048	-0.108	-0.373	0.518	-0.075	-0.087
M & O Tax Rate	-0.059	0.385	0.402	0.308	-0.110	0.128	0.056
Wealth-Property Value Per Pupil	1.000	0.595	0.647	0.762	-0.625	0.367	0.127
Operating Cost Per Pupil	0.595	1.000	0.907	0.785	-0.400	0.451	0.169
I & S Rate	-0.272	-0.296	-0.248	-0.363	0.358	-0.095	-0.018
Average Teacher Salary, 1984-85	0.389	0.441	0.343	0.575	-0.619	0.042	-0.055
Average Salary & Career Ladder	0.382	0.426	0.322	0.554	-0.606	0.025	-0.070
Mean Career Ladder Supplement	-0.141	-0.158	-0.138	-0.222	0.233	-0.038	0.008
Mean Beginning Teacher Salary	0.412	0.362	0.303	0.495	-0.525	0.016	-0.888
Unadjusted PDI (Raw PDI)	0.055	0.024	-0.158	0.093	-0.316	-0.337	-0.355
Total Salary Adjusted by Raw PDI	0.446	0.525	0.545	0.623	-0.495	0.319	0.209
Number of Special Education Pupils	0.171	0.107	-0.041	0.167	-0.322	-0.235	-0.296
Number of Vocational Ed. Pupils	0.175	0.093	-0.050	0.166	-0.331	-0.226	-0.281
Number of Regular Ed. Pupils	0.166	0.094	-0.051	0.161	-0.323	-0.234	-0.289
Number of Comp. Ed. Pupils	0.116	0.089	-0.067	0.080	-0.202	-0.218	-0.270
Number of Bilingual Ed. Pupils	0.104	0.079	-0.065	0.066	-0.177	-0.220	-0.275
Number of Gifted & Talented Pupils	0.188	0.107	-0.030	0.188	-0.347	-0.239	-0.304
PDI Allocation Per Pupil	0.009	-0.006	-0.177	0.052	-0.268	-0.328	-0.330
Small District. Alloc. Per Pupil	0.143	0.277	0.430	0.131	0.217	0.409	0.314
LFA as a Percent of State Aid	0.697	0.559	0.556	0.901	-0.951	0.220	0.056
Equal Enrichment Per Pupil	-0.527	-0.366	-0.359	-0.764	0.922	-0.106	-0.006

Table 2
(continued)

	Wealth	Operating Cost	Total Revenue	Local Revenue	State Revenue	Beginn. Fund Balance	Percent Fund Balance of Total Revenue
Exper. Teacher Alloc. Per Pupil	-0.001	0.045	0.009	0.038	-0.054	-0.047	-0.068
Equalization Transition Per Pupil	0.415	0.438	0.487	0.630	-0.565	0.254	0.147
Local Fund Assignment Per Pupil	0.730	0.625	0.630	0.920	-0.908	0.288	0.086
Sum of All Special Program Pupils	0.136	0.090	-0.056	0.111	-0.244	-0.230	-0.288
Special Pupils as % of Total Pupils	-0.177	-0.017	-0.142	-0.303	0.366	-0.196	-0.217
Regular Pupils as % of Total Pupils	0.161	0.083	0.080	0.194	-0.245	0.094	0.085
Total State & Local Revenue Per Pupil	0.647	0.907	1.000	0.838	-0.394	0.546	0.220
Local Revenue Per Pupil	0.762	0.785	0.838	1.000	-0.832	0.410	0.144
State Revenue Per Pupil	-0.625	-0.400	-0.394	-0.832	1.000	-0.136	-0.020
Beginning Fund Balance Per Pupil	0.367	0.451	0.546	0.410	-0.136	1.000	0.879
% Fund Balance of Total Revenue	0.127	0.169	0.220	0.144	-0.020	0.879	1.000
Local Enrichment Per Pupil	0.721	0.821	0.900	0.970	-0.718	0.454	0.169
State&Local Enrichment Per Pupil	0.682	0.852	0.946	0.899	-0.551	0.502	0.197
Minimum Salary Ratio, 1985	0.153	0.159	0.108	0.221	-0.261	-0.005	-0.054
Minimum Salary Ratio, 1986	0.149	0.156	0.107	0.216	-0.255	-0.005	-0.053

a/ Operating Cost and revenue variables do not contain allowable adjustments which are necessary in the analysis of equity. Local revenue, state revenue, beginning fund balance and percentage fund balance of total revenue, are only part of total revenue variable.

Table 3

Correlations Between Tax Rates and Selected Variables

Variables	Total Tax Rate	M&O Rate	I&S Rate a/
Total Tax Rate	1.000	0.783	0.497
Minority Students as % of Total	-0.254	-0.196	-0.130
Black as % of Total	-0.148	0.017	-0.258
Hispanic as % of Total	-0.179	-0.218	0.020
Price Differential Index	-0.162	-0.109	-0.106
Refined ADA--Best 4 of 8 Weeks	-0.349	-0.179	-0.305
% 9th Grade Passing All Sec. TABS	0.186	0.140	0.100
Chg. in ADA, 1984 to 1985	-0.024	-0.268	0.336
Density: Students per Square Mile	-0.240	-0.177	-0.133
Lunch: Comp Ed as % of Total	-0.230	-0.189	-0.103
M & O Tax Rate	0.783	1.000	-0.150
Wealth-Property Value Per Pupil	-0.223	-0.059	-0.272
Operating Cost Per Pupil	0.152	0.385	-0.296
I & S Rate	0.497	-0.150	1.000
Average Teacher Salary, 1984-85	-0.042	0.196	-0.340
Average Salary & Career Ladder	-0.007	0.165	-0.342
Mean Career Ladder Supplement	-0.359	-0.106	0.092
Mean Beginning Teacher Salary	-0.075	0.106	-0.267
Unadjusted PDI (Raw PDI)	-0.222	-0.128	-0.175
Total Salary Adjusted by Raw PDI	0.091	0.307	-0.284
Number of Special Education Pupils	-0.359	-0.179	-0.321
Number of Vocational Ed. Pupils	-0.377	-0.198	-0.325
Number of Regular Ed. Pupils	-0.347	-0.178	-0.303
Number of Comp. Ed. Pupils	-0.354	-0.195	-0.290
Number of Bilingual Ed. Pupils	-0.339	-0.202	-0.257
Number of Gifted & Talented Pupils	-0.376	-0.205	-0.311
PDI Allocation Per Pupil	-0.162	-0.109	-0.105
Small District. Alloc. Per Pupil	0.055	0.097	-0.047
LFA as a Percent of State Aid	0.000	0.101	-0.410
Equal Enrichment Per Pupil	0.132	-0.162	0.436
Exper. Teacher Alloc. Per Pupil	-0.147	0.053	-0.307
Equalization Transition Per Pupil	0.087	0.154	-0.077
Local Fund Assignment Per Pupil	-0.187	0.094	-0.429
Sum of All Special Program Pupils	-0.359	-0.203	-0.288
Special Pupils at % of Total Pupils	-0.222	-0.255	0.004
Regular Pupils at % of Total Pupils	0.094	0.018	0.125
Total State & Local Revenue Per Pupil	0.197	0.402	-0.248
Local Revenue Per Pupil	0.042	0.308	-0.363
State Revenue Per Pupil	0.129	-0.110	0.358
Beginning Fund Balance Per Pupil	0.053	0.128	-0.095
% Fund Balance of Total Revenue	0.038	0.056	-0.018
Local Enrichment Per Pupil	0.182	0.417	-0.293
State&Local Enrichment Per Pupil	0.257	0.439	-0.205
Minimum Salary Ratio, 1985	-0.184	0.071	-0.391
Minimum Salary Ratio, 1986	-0.178	0.071	-0.382

a/ Because of the long term expenditure and benefits related to debt service, attribution of this cost to any one year is tenuous.

Table 4

Correlations Between Selected Variables and Teacher Salaries

	Beginning Salary	Average Salary	Career Ladder	Total Salary
Total Tax Rate	-0.075	-0.042	-0.035	-0.070
Minority Students as % of Total	0.080	0.040	0.070	0.065
Black as % of Total	0.195	0.216	-0.234	0.218
Hispanic as % of Total	-0.054	-0.112	0.213	-0.087
Price Differential Index	0.040	0.578	-0.015	0.600
Refined ADA--Best 4 of 8 Weeks	0.335	0.309	-0.167	0.340
% 9th Grade Passing All Sec. TABS	0.013	0.091	0.042	0.076
Chg. in ADA, 1984 to 1985	-0.106	-0.202	0.164	-0.189
Density: Students per Square Mile	0.230	0.345	-0.006	0.373
Lunch: Comp Ed as % of Total	-0.123	-0.190	0.116	-0.170
M & O Tax Rate	0.106	0.196	-0.106	0.165
Wealth-Property Value Per Pupil	0.412	0.389	-0.141	0.381
Operating Cost Per Pupil	0.361	0.440	-0.158	0.426
I & S Rate	-0.266	-0.339	0.090	-0.342
Average Teacher Salary, 1984-85	0.734	1.000	-0.090	0.990
Average Salary & Career Ladder	-0.723	0.990	-0.067	1.000
Mean Career Ladder Supplement	-0.059	-0.093	1.000	-0.067
Mean Beginning Teacher Salary	1.000	0.735	-0.058	0.723
Unadjusted PDI (Raw PDI)	0.436	0.566	-0.058	0.590
Total Salary Adjusted by Raw PDI	0.546	0.760	-0.043	0.740
Number of Special Education Pupils	0.323	0.303	0.181	0.335
Number of Vocational Ed. Pupils	0.357	0.332	-0.161	0.364
Number of Regular Ed. Pupils	0.335	0.308	-0.167	0.339
Number of Comp. Ed. Pupils	0.265	0.234	-0.148	0.266
Number of Bilingual Ed. Pupils	0.256	0.184	-0.163	0.211
Number of Gifted & Talented Pupils	0.342	0.336	-0.151	0.371
PDI Allocation Per Pupil	0.400	0.578	-0.014	0.600
Small District. Alloc. Per Pupil	-0.204	-0.340	-0.357	-0.357
LFA as a Percent of State Aid	0.537	0.614	0.600	0.600

Table 4
(continued)

	Beginning Salary	Average Salary	Career Ladder	Total Salary
Equal Enrichment Per Pupil	-0.481	-0.561	-0.550	-0.550
Exper. Teacher Alloc. Per Pupil	0.088	0.238	-0.131	0.247
Equalization Transition Per Pupil	0.246	0.338	-0.130	0.320
Local Fund Assignment Per Pupil	0.517	0.569	-0.246	0.557
Sum of All Special Program Pupils	0.296	0.240	-0.167	0.275
Special Pupils as % of Total Pupils	0.006	-0.065	0.093	-0.044
Regular Pupils as % of Total Pupils	0.176	0.182	0.053	0.179
Total State & Local Revenue Per Pupil	0.302	0.340	0.138	0.320
Local Revenue Per Pupil	0.494	0.574	-0.220	0.554
State Revenue Per Pupil	-0.525	-0.618	0.233	-0.600
Beginning Fund Balance Per Pupil	0.016	0.042	-0.038	0.024
% Fund Balance of Total Revenue	-0.089	-0.055	0.008	-0.069
Local Enrichment Per Pupil	0.440	0.531	-0.188	0.507
State&Local Enrichment Per Pupil	0.360	0.447	-0.141	0.423
Minimum Salary Ratio, 1985	0.208	0.410	-0.165	0.417
Minimum Salary Ratio, 1986	0.205	0.040	-0.161	0.409

a/Total Average Salary (1984-85) plus Career Ladder Adjusted by the Price Differential Index (1985-86).

Table 5

Correlations Between Test Scores and Selected Variables

Variables	TABS-Percent Passing All Sections	TEAMS-Total Standardized Score a/
Total Tax Rate	0.186	0.154
Minority Students as % of Total	-0.699	-0.695
Black as % of Total	-0.405	-0.351
Hispanic as % of Total	-0.493	-0.532
Price Differential Index	-0.134	-0.009
Refined ADA--Best 4 of 8 Weeks	-0.379	-0.173
% 9th Grade Passing All Sec. TABS	1.000	0.760
Chg. in ADA, 1984 to 1985	0.215	0.217
Density: Students per Square Mile	-0.202	-0.056
Lunch: Comp Ed as % of Total	-0.722	-0.772
M & O Tax Rate	0.140	0.120
Wealth-Property Value Per ADA	0.161	0.232
Operating Cost Per-Pupil	0.005	0.042
I & S Rate	0.100	0.079
Average Teacher Salary 1984-85	0.091	0.168
Average Salary & Career Ladder	0.077	0.167
Mean Career Ladder Supplement	0.042	-0.066
Mean Beginning Teacher Salary	0.013	0.050
Unadjusted PDI (Raw PDI)	-0.230	-0.072
Total Salary Adjusted by Raw PDI	0.279	0.256
Number of Special Education Pupils	-0.391	-0.182
Number of Vocational Ed. Pupils	-0.406	-0.226
Number of Regular Ed. Pupils	-0.378	-0.170
Number of Comp. Ed. Pupils	-0.485	-0.297
Number of Bilingual Ed. Pupils	-0.481	-0.283
Number of Gifted & Talented Pupils	0.000	-0.185
PDI Allocation Per-Pupil	-0.134	-0.008
Small District. Alloc. Per Pupil	0.075	0.017
LFA as a Percent of State Aid	0.202	0.319
Equal Enrichment Per Pupil	-0.258	-0.395
Exper. Teacher Alloc. Per Pupil	-0.170	-0.160
Equalization Transition Per Pupil	0.286	0.335
Local Fund Assignment Per Pupil	0.156	0.269
Sum of All Special Program Pupils	-0.455	-0.255
Special Pupils as % of Total Pupils	-0.597	-0.558
Regular Pupils as % of Total Pupils	0.172	0.240
Total State & Local Revenue Per Pupil	0.136	0.163
Local Revenue Per Pupil	0.255	0.344
State Revenue Per Pupil	-0.291	-0.413
Beginning Fund Balance Per Pupil	0.132	0.080
% Fund Balance of Total Revenue	0.131	0.071
Local Enrichment Per Pupil	0.296	0.365
State&Local Enrichment Per Pupil	0.267	0.303
Minimum Salary Ratio, 1985	-0.079	-0.043
Minimum Salary Ratio, 1986	-0.076	-0.041

a/ N = 897, only districts administering the test were included.

Table 6

Correlations Between Foundation School Progam Selected Variables

Variables	Price Differential Index	Small District Allotment	Equalization Enrichment	Experienced Teacher Allotment	Local Fund Assignment
Total Tax Rate	-0.162	0.055	0.132	-0.147	-0.169
Minority Students as % of Total	0.375	-0.203	0.288	0.077	-0.176
Black as % of Total	0.313	-0.147	-0.331	0.453	0.282
Hispanic as % of Total	0.162	-0.102	0.517	-0.178	-0.373
Price Differential Index	1.000	-0.674	-0.248	0.065	0.203
Refined ADA--Best 4 of 8 Weeks	0.569	-0.234	-0.356	0.230	0.362
% 9th Grade Passing All Sec. TABS	-0.134	0.075	-0.258	-0.170	0.202
Chg. in ADA, 1984 to 1985	-0.142	-0.050	0.054	-0.228	-0.059
Density: Students per Square Mile	0.727	-0.318	-0.081	0.055	0.122
Lunch: Comp Ed as % of Total	0.066	0.012	0.510	0.083	-0.377
M & O Tax Rate	-0.109	0.097	-0.162	0.053	0.101
Wealth-Property Value Per Pupil	0.010	0.143	-0.527	-0.001	0.697
Operating Cost Per Pupil	-0.006	0.277	-0.366	0.045	0.559
I & S Rate	-0.105	-0.047	0.436	-0.307	-0.410
Average Teacher Salary, 1984-85	0.579	-0.344	-0.561	0.239	0.614
Average Salary & Career Ladder	0.601	-0.358	-0.551	0.247	0.602
Mean Career Ladder Supplement	-0.015	0.033	0.255	-0.131	-0.240
Mean Beginning Teacher Salary	0.404	-0.205	-0.481	0.088	0.537
Unadjusted PDI (Raw PDI)	0.966	-0.617	-0.301	0.128	0.276
Total Salary Adjusted by Raw PDI	-0.059	0.078	-0.439	0.203	0.527
Number of Special Education Pupils	0.564	-0.229	-0.364	0.249	0.362
Number of Vocational Ed. Pupils	0.545	-0.224	-0.357	0.282	0.375
Number of Regular Ed. Pupils	0.570	-0.234	-0.355	0.228	0.361
Number of Comp. Ed. Pupils	0.492	-0.192	-0.225	0.238	0.264
Number of Bilingual Ed. Pupils	0.461	-0.177	-0.200	0.195	0.244
Number of Gifted & Talented Pupils	0.560	-0.225	-0.378	0.275	0.389
PDI Allocation Per Pupil	1.000	0.000	-0.247	0.065	0.203
Small District. Alloc. Per Pupil	-0.675	1.000	0.097	0.017	-0.030
LFA as a Percent of State Aid	0.203	-0.030	-0.873	0.071	1.000

Table 6
(continued)

Variables	Price Differential Index	Small District Allotment	Equalization Enrichment	Experienced Teacher Allotment	Local Fund Assignment
Equal Enrichment Per Pupil	-0.247	0.097	1.000	-0.178	-0.873
Exper. Teacher Alloc. Per Pupil	0.065	0.017	-0.178	1.000	0.171
Equalization Transition Per Pupil	-0.009	0.036	-0.459	-0.127	0.618
Local Fund Assignment Per Pupil	0.144	0.083	-0.844	0.097	0.983
Sum of All Special Program Pupils	0.591	-0.201	-0.271	0.230	0.302
Special Pupils as % of Total Pupils	0.268	-0.176	0.337	-0.029	-0.261
Regular Pupils as % of Total Pupils	0.198	-0.112	-0.125	-0.309	0.200
Total State&Local Revenue Per Pupil	-0.177	0.430	-0.359	0.009	0.556
Local Revenue Per Pupil	0.052	0.131	-0.764	0.038	0.901
State Revenue Per Pupil	-0.268	0.217	0.922	-0.054	-0.951
Beginning Fund Balance Per Pupil	-0.328	0.409	-0.106	-0.047	0.220
% Fund Balance of Total Revenue	-0.330	0.314	-0.006	-0.068	0.056
Local Enrichment Per Pupil	-0.009	0.150	-0.653	-0.002	0.778
State&Local Enrichment Per Pupil	-0.090	0.209	-0.450	-0.059	0.638
Minimum Salary Ratio 1985	0.134	-0.068	-0.298	0.650	0.274
Minimum Salary Ratio, 1986	0.130	-0.065	-0.291	0.638	0.268

Table 7

Correlations Between Number of Special Program Pupils and Selected Variables

Variables	Special Education	Vocational Education	Compensatory Education	Bilingual Education	Gifted & Talented Education	Non-Special Program Pupils
Total Tax Rate	-0.359	-0.378	-0.354	-0.339	-0.376	-0.347
Minority Students as % of Total	0.473	0.473	0.567	0.561	0.452	0.470
Black as % of Total	0.610	0.638	0.581	0.528	0.624	0.595
Hispanic as % of Total	0.110	0.095	0.231	0.254	0.081	0.114
Price Differential Index	0.566	0.547	0.494	0.462	0.561	0.571
Refined ADA--Best 4 of 8 Weeks	0.996	0.982	0.974	0.955	0.966	0.999
% 9th Grade Passing All Sec. TABS	-0.391	-0.406	-0.485	-0.481	-0.373	-0.378
Chg. in ADA, 1984 to 1985	-0.165	-0.151	-0.185	-0.167	-0.132	-0.157
Density: Students per Square Mile	0.588	0.567	0.587	0.600	0.570	0.601
Lunch: Comp Ed as % of Total	0.255	0.261	0.403	0.409	0.224	0.249
M & O Tax Rate	-0.179	-0.198	-0.195	-0.202	-0.205	-0.178
Wealth-Property Value Per Pupil	0.171	0.175	0.116	0.104	0.188	0.166
Operating Cost Per Pupil	0.107	0.093	0.089	0.079	0.107	0.094
I & S Rate	-0.321	-0.325	-0.290	-0.257	-0.311	-0.303
Average Teacher Salary, 1984-85	0.303	0.332	0.234	0.184	0.337	0.308
Average Salary & Career Ladder	0.336	0.364	0.267	0.212	0.371	0.339
Mean Career Ladder Supplement	-0.181	-0.161	-0.149	-0.164	-0.151	-0.167
Mean Beginning Teacher Salary	0.323	0.358	0.265	0.257	0.343	0.335
Unadjusted PDI (Raw PDI)	0.746	0.733	0.688	0.656	0.737	0.754
Total Salary Adjusted by Raw PDI	-0.188	-0.146	-0.223	-0.261	-0.141	-0.189
Number of Special Education Pupils	1.000	0.980	0.970	0.946	0.970	0.995
Number of Vocational Ed. Pupils	0.980	1.000	0.959	0.924	0.984	0.980
Number of Regular Ed. Pupils	0.995	0.980	0.974	0.956	0.964	1.000
Number of Comp. Ed. Pupils	0.970	0.959	1.000	0.984	0.929	0.974
Number of Bilingual Ed. Pupils	0.946	0.924	0.984	1.000	0.890	0.956
Number of Gifted & Talented Pupils	0.970	0.984	0.929	0.890	1.000	0.964
PDI Allocation Per Pupil	0.564	0.545	0.492	0.461	0.560	0.570
Small District. Alloc. Per Pupil	-0.229	-0.224	-0.192	-0.177	-0.225	-0.234
LFA as a Percent of State Aid	0.362	0.375	0.264	0.244	0.389	0.361

Table 7
(continued)

Variables	Special Education	Vocational Education	Compensatory Education	Bilingual Education	Gifted & Talented Education	Non-Special Program Pupils
Equal Enrichment Per Pupil	-0.364	-0.357	-0.225	-0.200	-0.378	-0.035
Exper. Teacher Alloc. Per Pupil	0.249	0.282	0.238	0.195	0.275	0.228
Equalization Transition Per Pupil	-0.049	-0.010	-0.107	-0.117	-0.026	-0.048
Local Fund Assignment Per Pupil	0.377	0.390	0.288	0.266	0.403	0.373
Sum of All Special Program Pupils	0.981	0.970	0.992	0.988	0.948	0.986
Special Pupils as % of Total Pupils	0.306	0.314	0.397	0.456	0.304	0.308
Regular Pupils as % of Total Pupils	-0.015	-0.046	-0.007	0.026	-0.034	0.029
Total State&Local Revenue Per Pupil	-0.041	-0.050	-0.067	-0.065	-0.030	-0.051
Local Revenue Per Pupil	0.167	0.166	0.080	0.066	0.188	0.161
State Revenue Per Pupil	-0.322	-0.331	-0.202	-0.177	-0.347	-0.323
Beginning Fund Balance Per Pupil	-0.235	-0.226	-0.218	-0.220	-0.239	-0.234
% Fund Balance of Total Revenue	-0.296	-0.281	-0.270	-0.275	-0.304	-0.289
Local Enrichment Per Pupil	0.023	0.014	-0.056	-0.063	0.039	0.017
State&Local Enrichment Per Pupil	-0.090	-0.100	-0.138	-0.139	-0.075	-0.094
Minimum Salary Ratio, 1985	0.278	0.307	0.251	0.202	0.298	0.258
Minimum Salary Ratio, 1986						

Table 8

Changes in Correlation Coefficient Over Time

	Wealth Per-Pupil	ADAa/	Percent Black	Percent Hispanic
Wealth Per Pupil 1983-84 b/	1.000	0.161	0.147	-0.149
Wealth Per Pupil 1985-86	1.000	0.166	0.111	-0.202
Change in Wealth Per Pupil	0.000	0.005	-0.036	-0.053
Operating Expenditures Per-Pupil, 1983-1984	0.610	0.100	0.191	-0.187
Operating Revenue Per Pupil 1985-86	0.595	0.095	0.105	0.008
Change in Operating Expenditure	-0.015	-0.005	-0.086	0.195
Low Teacher Salary, 1983-84	0.434	0.473	0.335	-0.265
Low Teacher Salary, 1985-86	0.412	0.335	0.195	-0.054
Change in Low Teacher Salary	-0.022	-0.138	-0.140	0.211
Average Teacher Salary, 1983-84	0.383	0.366	0.310	-0.305
Average Teacher Salary, 1985-86	0.389	0.309	0.216	-0.112
Change in Average Teacher Salary	0.006	-0.057	-0.094	0.193
Price Differential Index, 1984-85	0.204	0.403	0.268	-0.110
Price Differential Index, 1985-86	0.010	0.571	0.314	0.162
Change in Price Differential Index	-0.194	0.168	0.046	0.272
Equalization Enrichment Aid, 1984-85	-0.470	-0.335	-0.393	0.436
Equalization Enrichment Aid, 1985-86	-0.527	-0.356	-0.331	0.517
Change in Enrichment Equalization Aid	-0.057	0.021	0.062	0.081
Experienced Teacher Allotment, 1984-85	-0.154	0.322	0.328	0.801
Experienced Teacher Allotment, 1985-86	-0.001	0.230	0.453	0.077
Change in Experienced Teacher Allotment	0.153	-0.092	0.125	-0.724
Equalization Transition Aid, 1984-85	-0.458	0.128	-0.177	-0.176
Equalization Transition Aid, 1985-86	0.415	-0.046	-0.017	-0.281
Change in Equalization Transition Aid	0.873	-0.174	0.160	-0.105

a/ADA is for 1983-84, for 1985-86 ADA = RADA (Refined ADA; Best 4 of 8 weeks).

b/Data for 1983-84 and 1984-85 from Lyndon Baines Johnson School of Public Affairs, The University of Texas at Austin, Policy Research Report, No. 70, The Initial Effects of House Bill 72. These data represent preliminary state aid calculations. According to the report "the differences between preliminary and final calculations depend in most cases on changes in ADA; therefore, the per pupil figure . . . should not be substantially affected." (p. 23)

Table 9

Weighted Dispersion Measures for Total State and Local Revenue, Texas Foundation School Program, 1985-86

Measure	All Districts	All Districts Except Sparse a/
Mean	$2,390.13	$2,387.50
Standard Deviation	$ 379.69	$ 369.35
Coefficient of Variation	15.89	15.47
Gini Coefficient	0.075	0.074
McLoone Index	0.933	0.932
Federal Range Ratio	0.48	0.48
Range		
(100th-1st)	$9,781.00	$9,781.00
High	11,475.00	11,475.00
Low	1,694.00	1,694.00
Ratio	6.77	6.77
Restricted Range		
(95th-5th)	$ 965.00	$ 967.00
High	2,962.00	2,962.00
Low	1,997.00	1,995.00
Ratio	1.48	1.48
(90th-10th)	$ 716.00	$ 716.00
High	2,818.00	2,818.00
Low	2,102.00	2,102.00
Ratio	1.34	1.33
Correlation between Wealth and Revenue	0.60	0.61
Slope between Wealth and Revenue	0.0010	0.0011
Elasticity between Wealth and Revenue	0.0999	0.1073
	N=1063	N=981

a/As defined in current law, TEC, Chapter 2, § 16.104.

Table 10

Revenue Disparity Measures for 35 States in 1976,
Ranked from Most Equitable(1) to Least Equitable (35)

Restricted Range			Federal Range Ratio		
Rank	State	Value	Rank	State	Value
1	Louisiana	$283	1	Florida	.31
2	West Virginia	313	2	Louisiana	.31
3	Oklahoma	333	3	West Virginia	.36
4	North Carolina	340	4	New Mexico	.37
5	New Mexico	353	5	North Carolina	.43
6	Idaho	353	6	Idaho	.46
7	Florida	360	7	Wisconsin	.48
8	Arkansas	428	8	Minnesota	.50
9	Mississippi	485	9	Oklahoma	.50
10	Missouri Unified	503	10	Delaware	.54
11	Tennessee	504	11	Missouri Unified	.57
12	New Hampshire	551	12	Rhode Island	.58
13	Minnesota	562	13	Maryland	.60
14	Rhode Island	574	14	New Hampshire	.61
15	South Dakota	585	15	Indiana	.70
16	Wisconsin	590	16	Arkansas	.70
17	Delaware	592	17	Vermont	.70
18	South Carolina	604	18	Virginia	.77
19	Maine	619	19	Illinois Unified	.78
20	Indiana	624	20	Mississippi	.79
21	Vermont	633	21	Connecticut	.80
22	Kentucky	651	22	Oregon	.80
23	Maryland	656	23	New Jersey	.85
24	Virginia	660	24	Maine	.86
25	Nebraska	716	25	Kentucky	.88
26	Illinois Unified	770	26	South Dakota	.88
27	Texas	776	27	Texas	.89
28	Connecticut	801	28	Nebraska	.93
29	Oregon	836	29	Tennessee	.94
30	New Jersey	804	30	Wyoming	.97
31	Georgia	1,015	31	New York	1.04
32	Pennsylvania	1,123	32	South Carolina	1.05
33	Wyoming	1,129	33	Massachusetts	1.10
34	Massachusetts	1,421	34	Georgia	2.76
35	New York	1,591	35	Pennsylvania	3.90

Source: Education Finance Center, Education Commission on the States (1979), Equity in School Finance, Appendix C. Author: Denver, Colorado.

Table 11

Revenue Disparity Measures for 35 States in 1976, Ranked from Most Equitable (1) to Least Equitable (35)

McLoone Index			Coefficient of Variation		
Rank	State	Value	Rank	State	Value
1	New Mexico	.961	1	Louisiana	9.6
2	West Virginia	.951	2	Florida	9.8
3	North Carolina	.949	3	West Virginia	10.3
4	Florida	.947	4	North Carolina	10.8
5	Oklahoma	.942	5	Minnesota	12.5
6	Missouri Unified	.932	6	Rhode Island	13.6
7	Minnesota	.930	7	New Mexico	13.7
8	Mississippi	.926	8	Delaware	14.0
9	Idadho	.926	9	Wisconsin	14.2
10	Kentucky	.923	10	Mississippi	15.4
11	Maryland	.921	11	Idaho	15.4
12	Wyoming	.915	12	Maryland	15.7
13	Illinois Unified	.913	13	Indiana	16.2
14	Rhode Island	.911	14	Vermont	17.3
15	Massachusetts	.910	15	Connecticut	17.8
16	Louisiana	.906	16	South Dakota	17.9
17	Wisconsin	.901	17	Missouri Unified	18.2
18	New Hampshire	.895	18	Maine	18.3
19	Virginia	.892	19	Arkansas	18.8
20	Connecticut	.890	20	New Jersey	19.1
21	Arkansas	.888	21	Oregon	19.4
22	Nebraska	.886	22	Nebraska	20.7
23	Texas	.884	23	South Carolina	20.9
24	Indiana	.882	24	Oklahoma	21.3
25	Vermont	.880	25	Illinois Unified	21.5
26	Maine	.880	26	New Hampshire	22.1
27	Delaware	.879	27	Massachusetts	22.4
28	South Dakota	.874	28	Texas	22.5
29	New Jersey	.871	29	Kentucky	23.8
30	South Carolina	.868	30	Virginia	24.0
31	Tennessee	.864	31	Tennessee	24.2
32	Georgia	.835	32	New York	24.4
33	New York	.816	33	Wyoming	25.4
34	Oregon	.805	34	Georgia	33.6
35	Pennsylvania	.724	35	Pennsylvania	49.3

Source: Education Finance Center, Education Commission on the States (1979), Equity in School Finance, Appendix C. Author: Denver, Colorado.

Table 12

The Relationship Between Revenues and Wealth for 35 States in 1976, Ranked from Most Equitable (1) to Least Equitable

Correlation Between Wealth & Revenue			Elasticity Between Wealth & Revenue		
Rank	State	Value	Rank	State	Value
1	Illinois Unified	.25	1	Maine	.04
2	Maine	.32	2	Massachusetts	.05
3	Louisiana	.37	3	Mississippi	.06
4	New Mexico	.37	4	Louisiana	.06
5	Minnesota	.41	5	New Mexico	.06
6	New Jersey	.41	6	Vermont	.11
7	Wisconsin	.44	7	Minnesota	.12
8	Rhode Island	.45	8	Texas	.13
9	Tennessee	.46	9	New Jersey	.14
10	West Virginia	.49	10	North Carolina	.15
11	Vermont	.49	11	Illinois Unified	.16
12	Delaware	.51	12	West Virginia	.17
13	New Hampshire	.53	13	Wisconsin	.17
14	South Carolina	.55	14	Florida	.19
15	North Carolina	.56	15	Idaho	.19
16	Indiana	.58	16	Nebraska	.19
17	Massachusetts	.62	17	New Hampshire	.20
18	Texas	.62	18	Connecticut	.20
19	Connecticut	.63	19	Rhode Island	.22
20	Idaho	.64	20	Indiana	.23
21	Nebraska	.67	21	Tennessee	.24
22	Oregon	.70	22	Delaware	.24
23	Maryland	.70	23	Oklahoma	.27
24	Virginia	.71	24	Wyoming	.28
25	South Dakota	.76	25	South Dakota	.29
26	Florida	.77	26	Arkansas	.33
27	Kentucky	.78	27	Oregon	.33
28	New York	.79	28	Maryland	.36
29	Mississippi	.79	29	Missouri Unified	.36
30	Arkansas	.81	30	South Carolina	.36
31	Missouri Unified	.81	31	Virginia	.38
32	Pennsylvania	.81	32	New York	.40
33	Oklahoma	.85	33	Kentucky	.48
34	Wyoming	.89	34	Georgia	.65
35	Georgia	.93	35	Pennsylvania	.98

Source: Education Finance Center, Education Commission on the States (1979), Equity in School Finance, Appendix C. Author: Denver, Colorado.

Table 13

Weighted Dispersion Measures for Total Revenue: Cross Time Comparisons, Texas Foundation School Program, 1976, 1986

Measure	Years 1976 a/	1986	Difference Actual	Percent
Coefficient of Variation	22.5	15.9	6.6	29.33
Federal Range Ratio	0.89	0.48	0.41	46.07
McLoone Index	0.884	0.933	0.049	5.54
Restricted Range b/ (95th-5th)	$462.73	$272.52	190.21	41.11
Correlation (Wealth & Revenue)	0.62	0.60	0.02	3.23
Elasticity (Wealth & Revenue)	0.13	0.10	0.03	2.31

a/ Data for 1976 were taken from Tables 10-12. The Source: Education Finance Center, Education Commission of the States (1979), Equity in School Finance, Appendix C. Author: Denver, Colorado.

b/ Adjusted for inflation (1967 = 100). For fiscal year 1976 (September 1975-August 1976) U.S. Department of Labor, Bureau of Labor Statistics, in Business Statistics, (1977) United States Department of Commerce Bureau of Economic Analysis, p. 43. For fiscal year 1986 (September 1985-August 1986), U.S. Department of Labor, Bureau of Labor Statistics, in Economic Indicators, October 1986, Prepared for the Joint Economic Committee by the Council of Economic Advisors, United States Government Printing Office: Washington, D.C. The consumer price index for each month from September to August was summed and averaged to derive a fiscal year index for both 1976 and 1986.

Figure 2

A Comparison of Total State and Local Revenue, 1985–1986 at 5 Percent Intervals

* See Figure 6.8

Figure 3

A Comparison of Total State and Local Revenue, 1985–1986 at 0.5 Percent Intervals

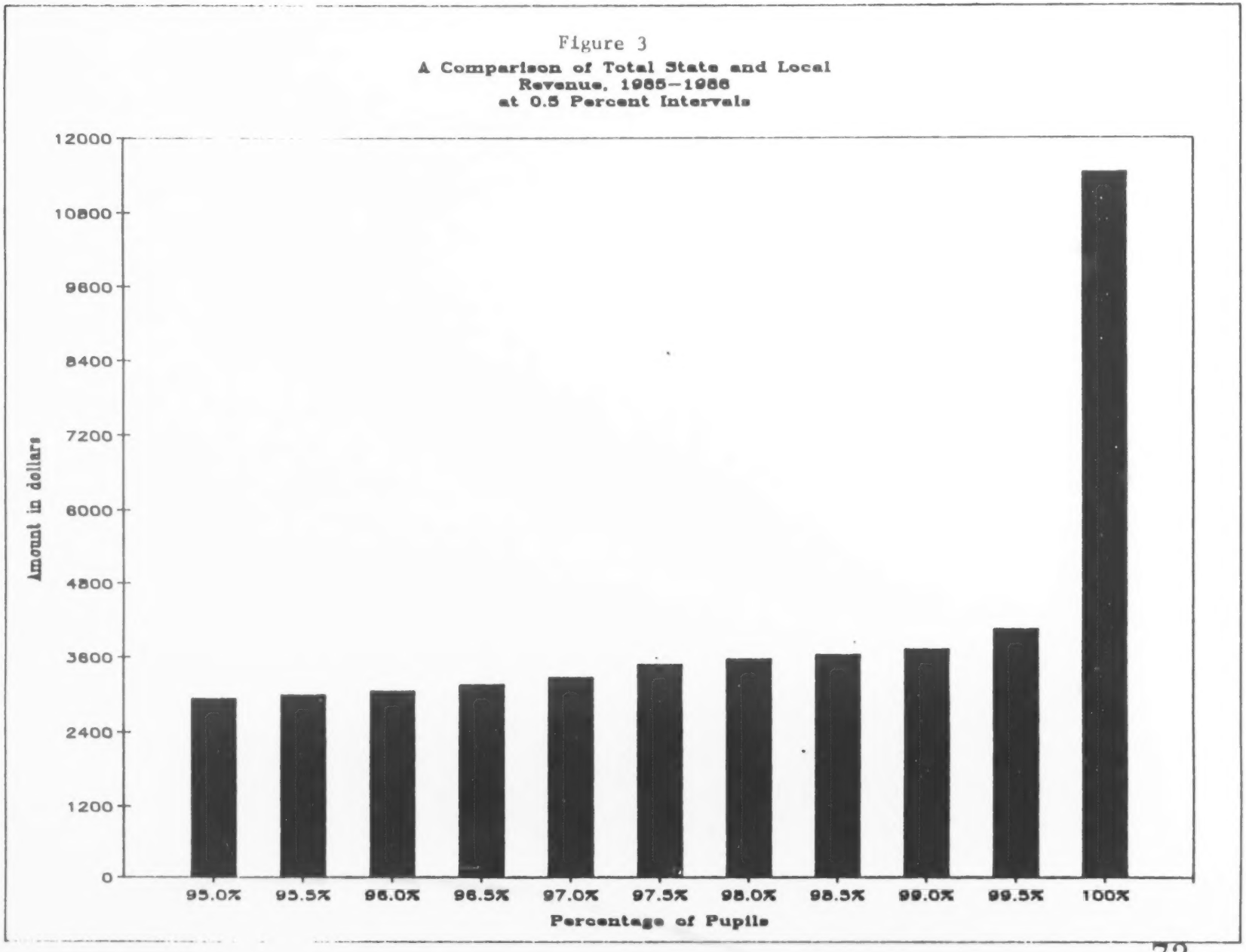


Table 14

A Comparison of Total State and Local Revenue at
5 Percent and 0.5 Percent Intervals

Percentage:	Revenue Per Pupil	Change to Next Highest Percentile Actual	Percentage	Revenue Per Pupil	Change to Next Highest Percentile Actual	Percentage
All Districts:				All Districts Excl. Sparse a/		
5 Percent Intervals						
0 Percent	$1,694.00	$ 0.00	0.00	$1,694.00	$ 0.00	0.00%
5 Percent	1,997.00	303.00	17.89	1,995.00	301.00	17.77
10 Percent	2,102.00	105.00	5.26	2,102.00	107.00	5.36
15 Percent	2,134.00	32.00	1.52	2.134.00	32.00	1.52
20 Percent	2,135.00	1.00	0.05	2,134.00	0.00	0.00
25 Percent	2,147.00	12.00	0.56	2,147.00	13.00	0.61
30 Percent	2,169.00	22.00	1.02	2,169.00	22.00	1.02
35 Percent	2,205.00	36.00	1.66	2,205.00	36.00	1.66
40 Percent	2,241.00	36.00	1.63	2,241.00	36.00	1.63
45 Percent	2,281.00	40.00	1.78	2,280.00	39.00	1.74
50 Percent	2,305.00	24.00	1.05	2,305.00	25.00	1.10
55 Percent	2,323.00	18.00	0.78	2,323.00	18.00	0.78
60 Percent	2,360.00	37.00	1.59	2,360.00	37.00	1.59
65 Percent	2,379.00	19.00	0.81	2,379.00	19.00	0.81
70 Percent	2,453.00	74.00	3.11	2,453.00	74.00	3.11
75 Percent	2,505.00	52.00	2.12	2,505.00	52.00	2.12
80 Percent	2,619.00	114.00	4.55	2,610.00	105.00	4.19
85 Percent	2,706.00	87.00	3.32	2,706.00	96.00	3.68
90 Percent	2,818.00	112.00	4.14	2,818.00	112.00	4.14
95 Percent	2,962.00	144.00	5.11	2,962.00	144.00	5.11
100 Percent	11,475.00	8,513.00	287.41	11,475.00	8,513.00	287.41
0.5 Percent Intervals						
95.0 Percent	2,962.00	0.00	0.00	$2,962.00	0.00	0.00
95.5 Percent	3,021.00	239.00	8.07	2,991.00	29.00	0.98
96.0 Percent	3,078.00	57.00	0.16	3,077.00	86.00	2.88
96.5 Percent	3,181.00	103.00	3.35	3,150.00	73.00	2.37
97.0 Percent	3,289.00	108.00	3.40	3,286.00	136.00	4.32
97.5 Percent	3,499.00	210.00	6.38	3,367.00	81.00	2.47
98.0 Percent	3,587.00	88.00	2.52	3,587.00	220.00	6.53
98.5 Percent	3,655.00	68.00	1.90	3,655.00	68.00	1.90
99.0 Percent	3,734.00	79.00	2.16	3,729.00	74.00	2.02
99.5 Percent	4,058.00	324.00	8.68	3,997.00	268.00	7.19
100 Percent	11,475.00	7,417.00	182.77	11,475.00	7,478.00	187.09
	N=1063			N=981		

a/ As defined in current law, TEC, Chapter 2, § 16.104.

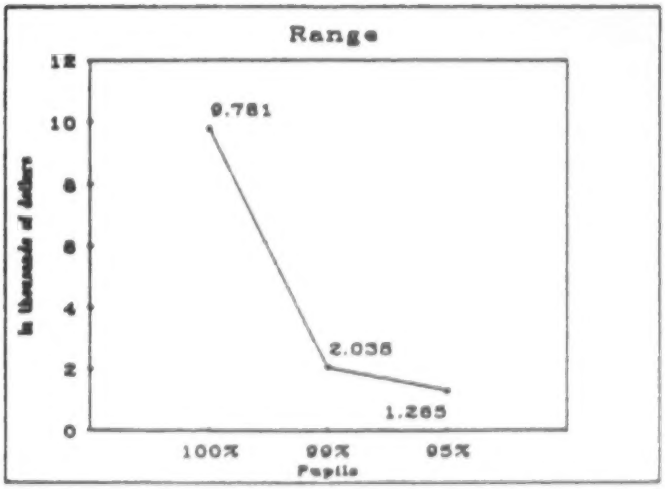
Table 15

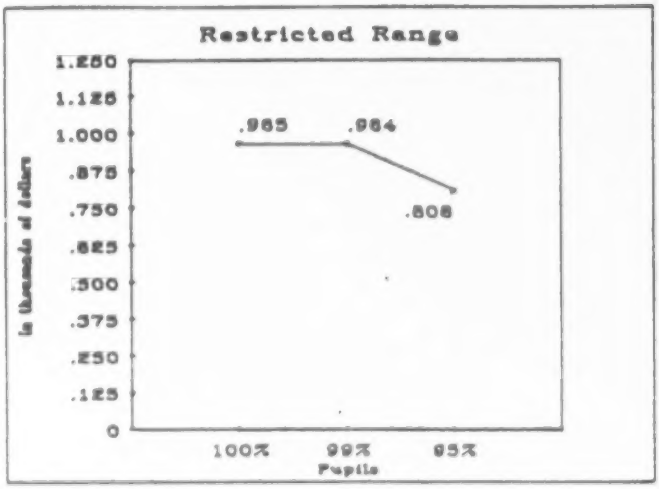
Weighted Dispersion Measures for Total Revenue
Texas School Foundation School Program, 1985-86

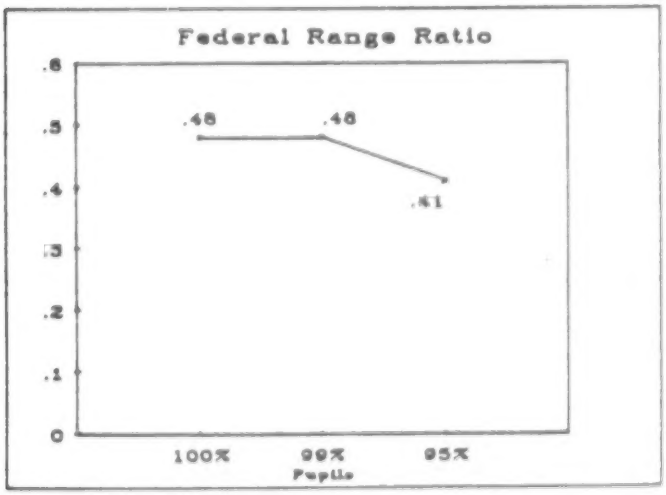
Measure	Pupils: 100%	99%	95%	Difference: 100% to 99%	99% to 95%	100% to 95%
Coefficient of Variation	15.89	13.16	10.16	2.73	3.00	5.73
Percent Change	--	0.17	0.23	0.17	0.23	0.36
Gini Coefficient	0.075	0.068	0.056	0.007	0.012	0.019
Percent Change	--	0.09	0.18	0.09	0.18	0.25
Federal Range Ratio	0.48	0.48	0.41	0.00	0.08	0.08
Percent Change	--	0.00	0.16	0.00	0.16	0.16
McLoone Index	0.993	0.933	0.933	0.00	0.00	0.00
Percent Change	--	0.00	0.00	0.00	0.00	0.00
Range						
(100th-1st)	$ 9,781.00	$2,035.00	$1,265.00	$7,746.00	$770.00	$8,512.00
High	11,475.00	3,729.00	2,959.00	7,746.00	770.00	8,516.00
Low	1,694.00	1,694.00	1,694.00	0.00	0.00	0.00
Ratio	6.77	2.20	1.75	4.57	0.45	0.74
Restricted Range						
(95th-5th)	$ 965.00	$ 964.00	$ 808.00	$ 1.00	$156.00	$ 157.00
High	2,962.00	2,959.00	2,803.00	3.00	156.00	159.00
Low	1,997.00	1,995.00	1,995.00	2.00	0.00	2.00
Ratio	1.48	1.48	1.41	0.00	0.08	0.08
(90th-10th)	$ 716.00	$ 703.00	$ 606.00	$ 13.00	$ 97.00	$ 110.00
High	2,818.00	2,805.00	2,706.00	13.00	99.00	112.00
Low	2,102.00	2,102.00	2,100.00	0.00	2.00	2.00
Ratio	1.34	1.33	1.29			

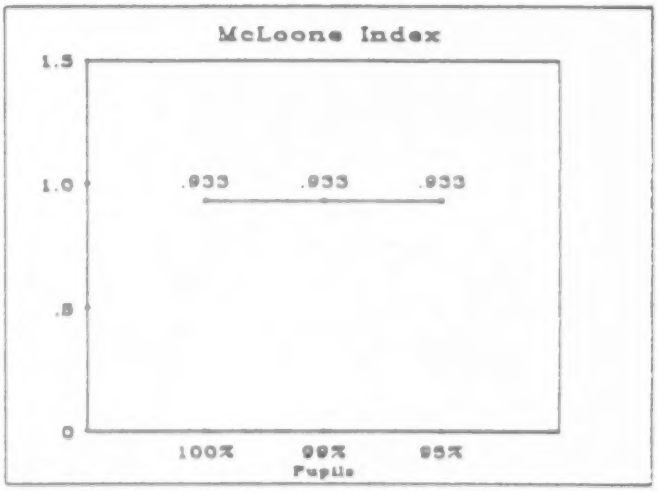
N=1063

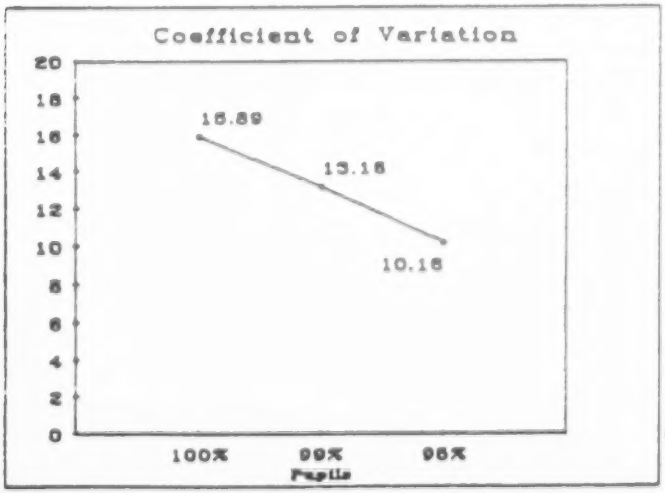
Figure 4
Weighted Dispersion Measures For Total Revenue:
All Pupils and Excluding One and Five
Percent of Total Pupils











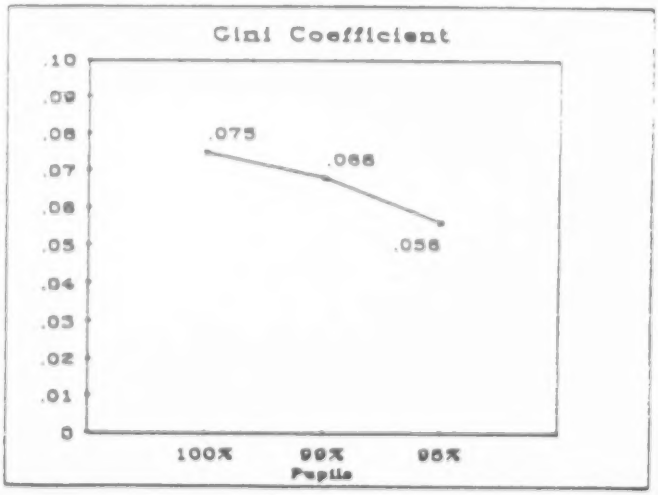


Table 16

Weighted Dispersion Measures for Total Revenue
Texas School Foundation School Program, 1985-86
Excluding Sparse Districts

Measure	Pupils: 100%	99%	95%	Difference: 100% to 99%	99% to 95%	100% to 95%
Coefficient of Variation	15.47	13.03	10.15	2.44	2.88	5.32
Percent Change	--	0.16	0.22	0.16	0.22	0.34
Gini Coefficient	0.074	0.068	0.056	0.006	0.012	0.018
Percent Change	--	0.08	0.18	0.08	0.18	0.24
Federal Range Ratio	0.48	0.47	0.41	0.01	0.07	0.08
Percent Change	--	0.02	0.14	0.02	0.14	0.16
McLoone Index	0.932	0.932	0.932	0.00	0.00	0.00
Percent Change	--	0.00	0.00	0.00	0.00	0.00
Range						
(100th-1st)	$ 9,781.00	$2,008.00	$1,265.00	$7,773.00	$743.00	$8,516.00
High	11,475.00	3,702.00	2,959.00	7,773.00	743.00	8,516.00
Low	1,694.00	1,694.00	1,694.00	0.00	0.00	0.00
Ratio	6.77	2.19	1.75	4.59	0.44	0.74
Restricted Range						
(95th-5th)	$ 967.00	$ 944.00	$ 808.00	$ 23.00	$136.00	$ 159.00
High	2,962.00	2,939.00	2,803.00	23.00	136.00	159.00
Low	1,995.00	1,995.00	1,995.00	0.00	0.00	0.00
Ratio	1.48	1.47	1.41	0.01	0.07	0.08
(90th-10th)	$ 716.00	$ 701.00	$ 607.00	$ 15.00	$ 94.00	$ 109.00
High	2,818.00	2,803.00	2,706.00	15.00	97.00	112.00
Low	2,102.00	2,102.00	2,099.00	0.00	3.00	3.00
Ratio	1.34	1.33	1.29			

N=981

Table 17

Correlations, Regressions, Slopes: Wealth and Revenue, Texas Foundation School Program, 1985-86

Wealth	Total Revenue by Percent of Pupils: 100%	99%	95%
LFA 1986 School Year Property Values:			
Correlation (r)	0.60	0.56	0.41
Regression (r^2)	0.36	0.31	0.17
Slope	0.0010	0.0012	0.0009
Elasticity	0.10	0.12	0.08
1985 Tax Year Values:			
Correlation (r)	0.62	0.57	0.43
Regression (r^2)	0.38	0.32	0.19
Slope	0.0010	0.0012	0.0009
Elasticity	0.10	0.12	0.08

APPENDIX A

THE MEAN, STANDARD DEVIATION, SUM, MINIMUM AND MAXIMUM VALUES FOR SELECTED VARIABLES (1) INCLUDING ALL DISTRICTS, (2) INCLUDING ALL DISTRICTS EXCEPT SPARSE DISTRICTS, AS DEFINED IN LAW.

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CORRELATION - PUPIL UNIT OF ANALYSIS BASED ON AVERAGE DAILY ATTENDANCE COUNTS

ALL DATA FOR 1985-86 SCHOOL YEAR EXCEPT GRADE 8 TABS SCORES AND TEACHER SALARIES (WHICH ARE FOR 1984-85)

VARIABLE	N	MEAN	STD DEV	SUM	MINIMUM	MAXIMUM
TOTATE86	1063	0.7020883	3.12143	2049334.2	0.08618889	.9891C
MINPC	1063	46.5532077	1930.79394	38181082.8	0.00000000	100.00000
BLKPC	1063	14.4016872	670.19248	42038581.0	0.00000000	86.41101
HISPCT	1063	30.3726619	1512.90421	88858624.8	0.00000000	100.00000
PCT	1063	.1857844	3.15982	3461314.0	.00000000	.44700
RADA	1063	30887.1142908	2399988.51857	90119731811.5	5.95000000	177935.98200
PASSP	97	55.8118566	80.20566	5408.2	0.00000000	100.00000
RADACHG	1063	.6252C61	193.14105	4743989.4	-41.64000000	64.48000
DENSITY	1063	218.8689998	12299.78129	638674506.4	0.00370000	1294.04010
LUNCH	1063	35.7464481	1236.67807	104344223.8	0.00000000	145.23000
M S RATE	1063	3.8662323	5.00691	1852636.2	0.03278020	.47908
WLTH	1063	240720.4271193	12214858.38281	7025848838491.0	21293.43815867	14892908.48277
KIDCOST	1063	3218.4140625	28285.60927	93887381.9	1929.00000000	1843.00000
ISRATE86	1063	0.1358333	1.73266	396498.0	0.00000000	0.93728
TCMSAL85	1063	22808.4791078	102589.14144	55994323845.4	15580.00000000	30339.00000
TCMTOT85	1063	23271.1443066	107013.36721	67928854423.5	16080.00000000	31489.00000
TCMCL585	1063	1643.3807383	11339.43297	4797041410.3	0.00000000	2061.00000
TCMBEG85	326	17912.8121795	82210.75815	5837319.3	0.70140000	28270.00000
RAWPOI86	1063	1.0131238	3.13552	1077116.3	0.70140000	1.1946
TCMRAW85	1063	22878.8348849	88185.12636	67075401297.1	19255.00000000	32341.00000
SPEPTE86	1063	1025.9298519	81204.76599	2994697687.3	0.00000000	1922.41900
VOCPTE86	1063	1069.1969513	88436.58999	3120994381.6	0.00000000	1817.84300
REGADA86	1063	2879.9873877	2234388.04480	8404403956.6	5.85000000	155895.90100
BESTA6	1063	37.4289880	13049.11533	401156205.8	0.00000000	938.19300
BILADA86	1063	3871.7743730	372754.77821	10428037728.2	0.00000000	27819.27500
GIFADA86	1063	1015.7424773	8350.23652	2944960330.5	0.00000000	8366.20000
PDIADA86	1063	190.5220477	3236.67002	858135485.2	0.00000000	283.10071
SDAADA86	1063	45.7862936	8777.17643	13592092.3	0.00000000	88.50031
IMPADA86	1063	120.0000000	0.00000	35C280951.6	120.00000000	120.00000
LEAPCT86	1063	20.2809259	847.58533	8831882.6	1.83000000	92.67900
EEAADA86	1063	182.8355528	8372.79171	474442567.9	0.00000000	817.30000
EXPADA86	1063	12.4495935	917.66781	36340462.0	0.00000000	186.00000
ETAADA86	1063	12.0080618	1008.13640	35045788.0	0.00000000	213.00000
LFAADA86	1063	843.7151286	19151.28337	1879009586.0	59.00000000	4428.00000
SPEPRE86	1063	5027.7924423	33098.24366	14678168020.0	0.00000000	37303.00000
VOCPRE86	1063	2274.7478193	13047.38214	6648763951.6	0.00000000	3193.30000
COMPPR86	1063	30368.5612144	238977.78543	88648071068.7	0.00000000	43945.30000
BILPR86	1063	44.0543772	2250.13367	42049569.8	0.00000000	220.20000
GIFPR86	1063	87.2754965	1804.61816	98377707.8	0.00000000	104.00000
OTHPUPR86	1063	6820.0727384	623909.83474	99078464.1.6	0.00000000	4586.62900
OTHPPCT6	1063	.1C98782	570.71850	4894267C.2	0.00000000	82.66000
REGPCT86	1063	82.1541757	88.66276	87191777.5	55.19000000	100.00000
SPEPCT85	1063	3.2825859	52.39749	9581806.8	0.00000000	35.19000
VOCPCT86	1063	2.5639546	80.40827	6403210.1	0.00000000	1.83000
GIFPCT86	1063	2.5088895	86.83644	7317830.2	0.00000000	1.82000
TOTADA86	1063	2970.3852377	28672.71447	8870878070.1	2070.00000000	1803.20000
LPVADA86	1063	1385.6274518	47484.48823	4073847801.3	55.00000000	1389.00000
FSTADA86	1063	1574.7583439	28206.35185	4596781286.9	204.00000000	1479.00000
FBLADA86	1063	519.2817518	2271.14752	1515729172.2	-245.00000000	1489.90000
FBLPCT86	1063	.1C6C8C76	544.6455	49800633.2	-6.88000000	228.93000
LRCHADA6	1063	791.9345478	30801.72658	2194902909.5	-181.00000000	1315.20000
RCHADA86	1063	914.4701007	28112.57803	2688345477.4	102.00000000	1313.20000
RCHPCT86	1063	171.8740384	5171.84102	501117871.1	10.85000000	1806.78000

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ALL DATA FOR 1985-86 SCHOOL YEAR EXCEPT GRADE 8 TABS SCORES AND TEACHER SALARIES (WHICH ARE FOR 1984-85)

VARIABLE	N	MEAN	STD DEV	SUM	MINIMUM	MAXIMUM
DASSA585	1063	3.8990250	2.21464	2916152.0	0.00000000	1.21
DASSA586	1063	3.3529948	2.12756	2916073.2	0.00000000	1.21

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CORRELATION - PUPIL UNIT OF ANALYSIS BASED ON AVERAGE DAILY ATTENDANCE COUNTS

ALL DATA FOR 1985-86 SCHOOL YEAR EXCEPT GRADE 8 TABS SCORES AND TEACHER SALARIES (WHICH ARE FOR 1984-85)

EXCLUDES SPARSE DISTRICTS

VARIABLE	N	MEAN	STD DEV	SUM	MINIMUM	MAXIMUM
TOTRTE86	981	0.701[illegible]814	9.48195	2043643.3	0.10383823	.885[illegible]
MINPCT	981	46.7072332	1591.03456	135993855.0	0.00000000	100.000000
BLKPCT	981	14.4314573	905.10899	4201.8964.2	0.00000000	88.452006
HISPCT	981	30.3926998	1973.38132	88493086.8	0.00000000	100.000000
PCT	981	1.1602132	3.25810	3453805.1	.00000000	.347006
MADA	981	30985.1962146	2498954.38595	90158890361.8	5.85000000	177838.962000
PASSR	971	55.8150585	822.83205	16189327.0	10.5263[illegible]75	100.000000
MADACHG	981	-.6287992	199.22128	4771581.4	-4[illegible].8400000	66.480000
DENSITY	981	219.4192022	12894.2488[illegible]	6388680[illegible].4	0.0057000[illegible]	1284.040100
FUNCH	981	35.7225642	1285.30794	10401670[illegible].1	0.00000000	143.230000
W O RATE	981	0.5858377	6.2867[illegible]	1647504.2	0.03278020	.299356
W_TR	981	23949.4891287	11489733.09800	697308951784.0	21293.4881588[illegible]	7328003.[illegible]11[illegible]
NIDDOS[illegible]	981	3210.6218907	28125.41528	934812[illegible]276.8	1926.00000000	18122.000000
ISRATE86	981	0.1380544	1.95706	3861[illegible]38.0	0.00000000	0.937276
TCHSAL86	981	22616.1753596	106383.13147	6584977858[illegible].5	15770.00000000	30335.000000
TCHTOT86	981	23279.8322358	110944.42959	6778122279[illegible].9	16820.00000000	31489.000000
TCHCLS86	981	1643.3983099	11789.81637	478495848[illegible].1	0.00000000	308[illegible].000000
TCHSEC86	889	17914.8932050	83775.06334	51738[illegible]248[illegible].3	3547.00000000	26270.000000
RAWPD86	981	1.0135132	3.23618	2950986.3	0.70140000	[illegible].9800
TCHRAW86	981	22978.1378277	89542.38658	6690[illegible]725392.0	19258.00000000	3294[illegible].000000
SPERTE86	981	1026.5237419	6448[illegible].12570	298467[illegible]484.[illegible]	0.00000000	3[illegible]5.47[illegible]000
VOCRTE86	981	107[illegible].895291[illegible]	89934.[illegible]3352	31208[illegible]55[illegible].8	0.00000000	58[illegible].642[illegible]00
REGADA86	981	28864.[illegible]7[illegible]1816	232463[illegible].11463	8404335[illegible]890.0	5.85000000	163893.901000
BESTA86	981	137.[illegible]7763904	13576.86798	40[illegible]52820.9	0.00000000	936[illegible].83000
BILADA86	981	2560.626880[illegible]	3879[illegible].30136	10426[illegible]3498.5	0.00000000	27[illegible].[illegible]5000
GIFADA86	981	1018.3164705	8667[illegible].6483[illegible]	2964[illegible]5580.5	0.00000000	5368.000000
PGIADA86	981	190.[illegible]816864	3335.24050	55600843[illegible].2	0.00000000	253.000000
SDAADA86	981	44.478339[illegible]	8908.39275	12950[illegible]38.8	0.00000000	88[illegible].000000
IMPADA86	981	120.0000000	0.00000	34939[illegible]7[illegible].5	120.00000000	120.000000
LEAPCT86	981	30.2873548	984.[illegible]1073	88098[illegible]013.3	[illegible].83000000	82.420000
EEAADA86	981	182.5[illegible]29226	8700.03641[illegible]	473147283.[illegible]	0.00000000	81[illegible].000000
EXPADA86	981	12.4420985	844.27794	36228[illegible]701.3	0.00000000	182.000000
ETAADA86	981	[illegible]1.9581310	1037.84848	34817570.8	0.00000000	313.000000
LEAADA86	981	842.6678232	19760.5078[illegible]	187[illegible]206475.[illegible]	55.00000000	3[illegible]13.000000
SPERPP86	981	5023.558[illegible]90[illegible]	32323.32445	1462871[illegible]097.0	0.00000000	21412.000000
VOCPP86	981	2278.[illegible]7[illegible]5834	[illegible]3135.88588	6633468[illegible]87.0	0.00000000	3182.000000
COMPPP86	981	30352.[illegible]868336[illegible]	351[illegible]795.44545	88376[illegible]12578.0	0.00000000	43841.000000
BI_PP86	981	144.3[illegible]101047	2420.54073	420[illegible]78834.2	0.00000000	220.000000
GIPP86	981	87.4332412	1870.07253	[illegible]96340[illegible]82.8	0.00000000	104.000000
OTHPUP86	981	6837.3425735	64[illegible]8[illegible].18[illegible]3	1990[illegible]764[illegible]73.8	0.00000000	4566[illegible].629000
OTHPRT86	981	[illegible]9.1262814	593.47605	49865216.4	0.00000000	82.880000
REGRT86	981	82.[illegible]567245	92.50045	[illegible]7[illegible]237270.[illegible]	55.19000000	100.000000
SPERRT86	981	2.2831[illegible]21	34.31053	9859420.6	0.00000000	33.[illegible]9000
VOCRT86	981	0.5807707	62.03878	10367822.3	0.00000000	[illegible].250000
GIRRT86	981	2.5129522	88.83756	7316770.0	0.00000000	1.620000
TOTADA86	981	2964.4448808	28464.91800	8831348[illegible]90.[illegible]	2870.00000000	1803[illegible].000000
LRVADA86	981	[illegible]391.4865125	46583.[illegible]7756	405[illegible]484[illegible]7[illegible].[illegible]	55.00000000	5[illegible]5[illegible].000000
PSTADA86	981	1870.9688634	29188.18952	4[illegible]7[illegible]9[illegible]2826.2	204.00000000	5479.000000
FBLADA86	981	918.[illegible]858600	22497.84850	[illegible]01424625.2	-204.00000000	14892.000000
FBLPCT86	981	[illegible].0163835	558.35354	49551[illegible]18.[illegible]	-5.03000000	225.030000
LRCHADA[illegible]	981	745.8408906	31352.09[illegible]16	2[illegible]0342435.0	-18[illegible].00000000	13126.000000
RCHADA86	981	911.3438134	28390.99706	2853488698.1	133.00000000	13126.000000

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EXCLUDES SPARSE DISTRICTS

VARIABLE	N	MEAN	STD DEV	SUM	MINIMUM	MAXIMUM
RCHPRT86	981	[illegible]1.5291824	5373.16204	499428325.5	10.85000000	1806.780000
DASSA585	981	0.9990447	1.29929	290884[illegible].5	0.00000000	[illegible].218000
DASSA586	981	0.9990[illegible]17	1.20687	2904745.5	0.00000000	[illegible].210000